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**THE GUNFIGHTER'S DILEMMA:
MULTIPLE ADVERSARY DETERRENCE AND COERCION**

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Master of Science in Defense Analysis–December 2000

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DoD Key TECHNOLOGY AREA: Information Operations

KEYWORDS: DETERRENCE, COERCION, INFORMATION OPERATIONS

20010314 047

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)	2. REPORT DATE 18.Jan.01	3. REPORT TYPE AND DATES COVERED THESIS		
4. TITLE AND SUBTITLE THE GUNFIGHTER'S DILEMMA:MULTIPLE ADVERSARY DETERENCE AND COERCION		5. FUNDING NUMBERS		
6. AUTHOR(S) MAJ PALMER JESS D				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) NAVAL POSTGRADUATE SCHOOL		8. PERFORMING ORGANIZATION REPORT NUMBER CI01-15		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) THE DEPARTMENT OF THE AIR FORCE AFIT/CIA, BLDG 125 2950 P STREET WPAFB OH 45433		10. SPONSORING/MONITORING AGENCY REPORT NUMBER		
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION AVAILABILITY STATEMENT Unlimited distribution In Accordance With AFI 35-205/AFIT Sup 1		12b. DISTRIBUTION CODE		
13. ABSTRACT (Maximum 200 words)				
14. SUBJECT TERMS			15. NUMBER OF PAGES 94	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT	

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NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

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by

Jess D. Palmer
Mark L. Stebbins
Andrew M. Zacherl

December 2000

Thesis Advisor:
Second Reader:

John Arquilla
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1. AGENCY USE ONLY		2. REPORT DATE December 2000	3. REPORT TYPE AND DATES COVERED Master's Thesis	
4. TITLE AND SUBTITLE: The Gunfighter's Dilemma: Multiple Adversary Deterrence and Coercion			5. FUNDING NUMBERS	
6. AUTHOR(S) Palmer, Jess; Stebbins, Mark; Zacherl, Andrew				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Naval Postgraduate School Monterey, CA 93943-5000			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) N/A			10. SPONSORING / MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the authors and do not reflect the official policy or position of the Department of Defense or the U.S. Government.				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.			12b. DISTRIBUTION CODE	
13. ABSTRACT (maximum 200 words) <p>Throughout history great powers have had to wrestle with the problem of maintaining their influence over the world around them. Often these powers were simultaneously faced with more than one opponent. In order to meet multiple challenges, leading nations have had to maximize the number of potential adversaries they could influence with each action or policy.</p> <p>Those faced with this dilemma have included the Romans, Byzantines, and the British Empire. Studying these nations in their struggle to maintain control revealed tactics and techniques that proved effective. Forward deployment, statements of perseverance, the use of coalitions, strategic distraction of opponents, and the demonstration of their relative superiority over adversaries all helped to preserve the longevity of these empires. Additionally, an effective information campaign, which amplified successes, proved invaluable to these world powers.</p> <p>This thesis explores how a single action often affects more than just the two parties taking and receiving action. It then discusses the flow of how the information content of foreign policy actions transfers from the primary actor to multiple secondary actors. We then use historical cases of multi-adversary deterrence and coercion as models of how our hypotheses, coupled with a good information strategy, maximized the studied powers' effectiveness.</p>				
14. SUBJECT TERMS Deterrence, Coercion, Information Operations			15. NUMBER OF PAGES 108	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	20. LIMITATION OF ABSTRACT UL	

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN DEFENSE ANALYSIS

from the

**NAVAL POSTGRADUATE SCHOOL
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Those faced with this dilemma have included the Romans, Byzantines, and the British Empire. Studying these nations in their struggle to maintain control revealed certain tactics and techniques that proved effective. Forward deployment, perseverance in foreign policy goals, the use of coalitions, strategic distraction of prospective opponents, and the demonstration of their relative superiority over adversaries all helped to preserve the longevity of these empires. Additionally, an effective information campaign, which amplified successes, proved invaluable to these world powers.

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I. INTRODUCTION

A. THE GUNFIGHTER'S DILEMMA

A renowned gunfighter comes back into town seeking revenge. He walks into the bar. The armed locals gather to take the master gunfighter down. Facing multiple foes, he accepts the possibility that he could be killed, but for that to happen, one of the opposing gunfighters would have to draw first and die in the process. The overwhelming number of armed locals would eventually get him, but each and every local knows that the first one to draw would be the first to die. They understand that, together, they could surely kill the gunfighter. It would only take one of them willing to die first. By making the locals understand this, the gunfighter has successfully solved the “gunfighter’s dilemma.” As each local in the bar contemplates his own fate, the tenuous coalition of armed locals evaporates. No one draws his gun. No one is willing to make the ultimate sacrifice of dying first to help the others take down the master gunfighter.

Like the master gunfighter of old, the United States is faced with various challengers throughout the world. Individually, no adversarial regional actor can seriously challenge the supremacy of American military and economic might. But if several regional adversaries of the United States, like the locals in the scene above, coordinate their actions, they might succeed against the United States. Therefore, the United States must also solve the “gunfighter’s dilemma.” Each adversary must have no doubt that the first to challenge the United States will pay a horrible price. This prospect may prevent coordinated actions against the United States.

B. THESIS STATEMENT

This thesis will explore how the United States, specifically the United States Department of Defense (DoD), can simultaneously deter several hostile regional actors. A variety of regional adversaries around the globe confront the United States, presenting problems that are different from the major challenges that the United States faced during the Cold War. Additionally, each regional adversary features unique cultural, regional and religious identities. Clearly, the United States became proficient during the Cold War in dealing with its major adversary in a bipolar world. The new question is, now that the Cold War has ended, what, if any, changes does the American government and military need to make to confront the rise of regional, rather than global, threats?

How can the United States create a “gunfighter’s dilemma” for regional adversaries throughout the world? Why this is an important matter to consider and how does it tie in to our National Military Strategy? This thesis attempts to answer these questions. There are several different approaches to the problem, and we will discuss each of them. We will show why we have selected cost-benefit analysis as the basis for our approach. We will discuss the role that information strategy has in influencing adversarial perceptions. We will also test several hypotheses derived from deterrence and coercion literature. We employ case studies to test our theories, helping us see how nations in similar roles in the past have addressed the same issues. Finally, we will recommend how the United States, and particularly the DoD, can apply our insights to the problem of keeping the peace in a world replete with rising regional adversaries.

Given the goal of deterring several hostile regional actors simultaneously, we will explore whether our test hypotheses might achieve the American objectives and, if so, how the United States might accomplish them. Our thesis is that the following five variables, used properly, can deter or coerce multiple adversaries simultaneously. Credible statements of perseverance strengthen deterrence and coercion. The forward presence of visible signs of power can create a favorable local balance of power. The use of coalition allows an enlargement of a country's sphere of influence and enhances deterrence efforts. Relative superiority can be leveraged to deter adversaries. Strategic distractions can be created to deter adversarial actions. These are all methods to create the "gunfighter's dilemma" in the minds of America's adversaries. These variables can be used to achieve the goals addressed by the following questions. How can American decision-makers:

1. Maximize the deterrent effect of American actions?
2. Mitigate the negative secondary effects while capitalizing on the positive secondary effects of American actions?
3. Ensure any action taken by the United States has the greatest possible favorable impact to American objectives, by managing the primary and secondary effects on all targeted audiences?

These goals implicitly point out a need to look at deterrence and coercion beyond a relatively simple one-on-one relationship between the United States and a specific adversary. All foreign policy actions taken by the United States against a country have implications; intended and unintended, for the global audience that observes the action. This multi-dimensional aspect of foreign policy is a critical function of how this thesis will address how the United States should deter and coerce adversaries simultaneously

through harnessing the secondary deterrent effect on observing actors of actions taken against a primary actor.

C. JUSTIFICATION

Why worry about the United States' ability to deter multiple adversaries simultaneously? The issue explicitly addresses several goals of the National Security Strategy laid out in the Secretary of Defense's Year 2000 Annual Defense Review. This document specifically lays out objectives of American strategy¹. These objectives are in part dictated by the government's need to address this deterrence problem.

Therefore, the United States must be able to deter actors from taking actions detrimental to these objectives and coerce those actors that have not been deterred. This thesis lays down a course of action to accomplish this. We argue that the application of our hypotheses will have a positive effect on American deterrence and coercion.

D. DETERRENCE AND COERCION THEORY

Three methods are generally used to analyze problems of deterrence and coercion. They are broad audience deterrence, extended deterrence (both immediate and general), and cost-benefit analysis. Each method addresses the problem differently and has individual strengths and weaknesses.

¹ The National Security Strategy states the need to:

“Prevent the emergence of hostile regional coalitions or hegemonies.”

“Deterring and, if necessary, defeating aggression against U.S. allies and friends.”

“Ensuring uninhibited access to key markets, energy supplies and strategic resources.”

“Ensuring freedom of the seas, airways, and space as well as the security of vital lines of communications.”

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Broad audience deterrence, or foreign policy by proclamation, is the use of broad actions or statements to counter a wide range of threats simultaneously. The goal of these statements or actions is to deter a general, unspecified audience, usually consisting of more than one potential adversary, with a single policy. General deterrence suffers from a lack of focus. General statements often fail to address specific concerns of potential attackers and leave it up to the attacker to determine if the statement applies to them. Failure to include specific concerns has can lead to conflict. Secretary of State Dean Acheson's failure to include South Korea specifically in the U.S. sphere of influence is believed to have led, in part, to the invasion by North Korea in 1950 (Taft, 1950). If a single attacker challenges a general deterrence policy and the defender fails to respond, the general deterrent statement loses credibility with all potential attackers.

Extended deterrence is a situation in which policymakers (the defender) threaten military retaliation against another state (the attacker) in an attempt to prevent that state from using military force against an ally of the defender (the protégé). The immediate case involves an attacker who is actively considering the use of force against another state. In general extended deterrence cases, a military attack is possible but not under active consideration (Huth, 1988, p.16).

The extended deterrence literature generally addresses attackers one at a time. Extended deterrence is two-dimensional and fails to address a broad audience by concentrating on deterring a single audience only. It is a one-to-one policy that does not account for the impact the policy has on parties other than the potential aggressor state. The specific manner that is most effective in deterring a potential aggressor state and

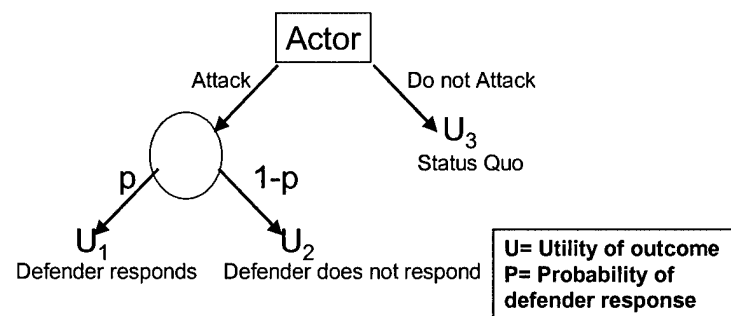
therefore pursued in an extended deterrence model may be detrimental to deterring other states from pursuing goals contrary to the defender's objectives.

Both general and extended deterrence are limited in their applicability for this study because they take into account only deterrence. The theories are sound, but this paper also needs to address coercion. So, while the general and extended theories are valid concepts in the constrained study of deterrence, our study expands beyond the relatively basic concept of stopping adversarial actions with just deterrence to account for how to influence actors that have taken action. Deterrence theory does not completely encompass the question we are studying. Once deterrence fails, these theories fail to provide guidance as to how to enact coercive measures. We consider this to be a significant shortcoming in the American government's ability to implement policies that achieve the national security strategy. Therefore we must also look at what happens once an adversarial actor takes action that we want to stop or adjust. How we react to ongoing actions by other actors is an important part of how we should shape our decision-making calculus.

For the purpose of this thesis, cost benefit analysis is a combination of the rational choice and prospect deterrent theories of Watman, et al, and the cost benefit coercion model of Hinkle & Biddle (Hinkle, 1997). Both these theories use the same basic calculus. That calculus is the cost of acting, or continuing to act, versus the benefit of acting or continuing to act. Success by the defender relies upon their ability to make the cost of acting against its desires greater than the benefit of acting against the defender's desires. Once again, this is essentially a one-dimensional model that relies upon considering the calculus of a single actor. However, due to the manner in which cost-

benefit analysis deals with actors, it is easily modified to examine the deterrent and coercive effects of a single action upon multiple actors. A brief discussion of the two basic cost-benefit analysis components, the Watman, et al and Hinkle/Biddle theories, prior to addressing the modifications made to form the multiple actor model used in this thesis is appropriate.

The Watman, et al Theory of Deterrence relies upon the rational choice theory, that being that decision makers will act in their best interest, whatever they perceive to be their best interest (p.18). See figure 1. The best interest perceived by the decision-maker is not necessarily the same as the best interest of the nation he or she represents, but may run the gamut from despotic self-interest to patriotic sacrifice. Identifying the decision-maker's "best interest" is crucial to the implementation of effective deterrent measures in this model.



U_1 must be less than U_2 and U_3 to deter
Watman et al, p 19

Figure 1 Watman et. al., Deterrence Model

The leader's decision-making process places a value on the expected utility of taking an action, modified by the probability of a response from the defender, against the utility of taking an action if the defender does not respond and against the utility of the status quo.

The Hinkle/Biddle Model is a coercive model that also follows the cost-benefit analysis concept (figure 2). It lays down that the probability multiplied by the benefit of complying minus the probability multiplied by the cost of complying must be greater than the probability multiplied by the benefit of resisting minus the probability multiplied by the cost of resisting for coercion to be successful (Hinkle, 97).

$$p_1 B_{\text{comply}} - p_2 C_{\text{comply}} > p_3 B_{\text{resist}} - p_4 C_{\text{resist}}$$

B= Benefit
C= Cost
P= Probability of occurrence

The total value for compliance must outweigh the total value for resistance
Hinkle, 1999

Figure 2 Hinkle/Biddle Coercion Model

By using both of these models, we developed a three dimensional, or multiple actor, cost-benefit model. The model has a resulting throughput in that in this model any

action taken by the defender, the United States in this case, against a primary target audience, actor 1, has a residual secondary effect on other actors, actor 2 through actor n.

The primary effect is defined as the cost-benefit modification of actor 1 as a direct result of action taken by the defender against actor 1. The secondary effect is the modification of the other actors' cost-benefit equations resulting from the action against actor 1. While the action against actor 1 can be either deterrent or coercive, the secondary effect is always deterrent.

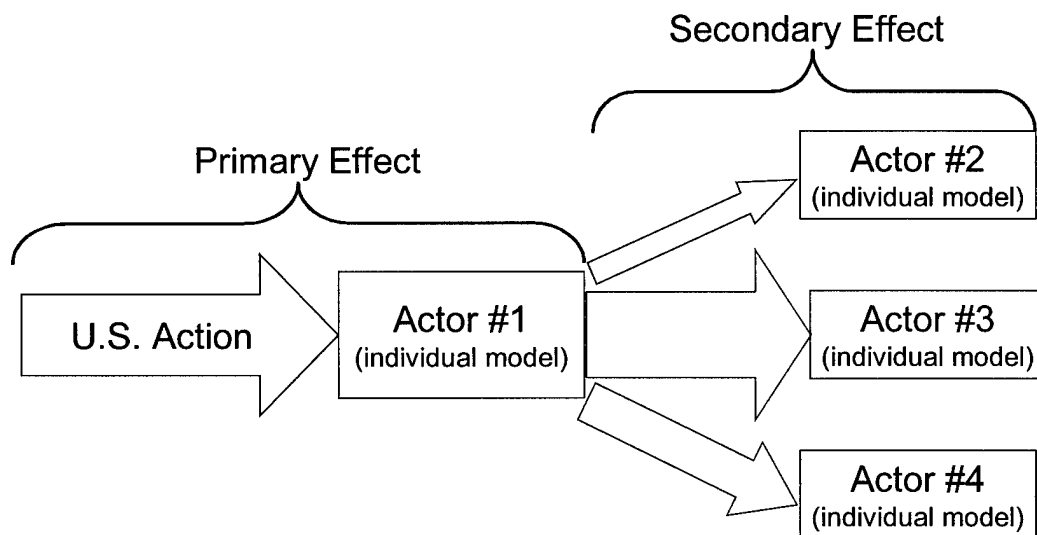


Figure 3 Three-Dimensional, Multiple Actor Model

As depicted above, the secondary effects vary according to the actor and are not necessarily uniform. The calculus of actor 2 is often different than actor 3 and therefore the amount any individual actor is influenced by the primary effect varies. Furthermore, the secondary effects can be greater than the primary effect in certain circumstances. For

example, a relatively insignificant action taken against actor 1 may resonate strongly with a targeted secondary audience, actor 3, where the greater modification occurs in actor 3 rather than actor 1.

Given this concept, American decision-makers must identify the following:

1. Which actors do they wish to target?
2. What actions do they want to deter or coerce?
3. What facet of the target actor's decisional calculus do they want to modify?
4. What opportunities exist to facilitate these modifications, either through primary or secondary effects?
5. Can opportunities be constructed to allow facilitating these modifications?
6. What course of action achieves the objective while maximizing the total beneficial modification of the targeted actors?

This implicitly requires identification of the actors that American policy makers hope to influence. If the policy makers wish to influence actors 1 and 4 then they must identify the primary and secondary effects that have the greatest beneficial impact in influencing actors 1 and 4. However, the impact on other actors should be considered and weighed to prevent unacceptable unintended consequences.

E. THE ROLE OF INFORMATION

How are these "effects" and "impacts" transmitted to the secondary audience? These are transmitted and processed as information. The information is targeted at the decision-making process of the adversarial leadership. Any action taken by the United States and the target audiences' response contain information content. This results in a three-dimensional throughput model. In the three dimensional model, the information content that is contained in the American action and the resulting target interpretations of

that information by both primary and secondary audiences are the lynch pins in transmitting deterrent and coercion messages.

The model becomes three-dimensional through information. That is how we are able to influence multiple targets with a single action. Information content is often more efficient and less costly for reaching all the target audiences than trying to take action separately against each target audience. Therefore, information content should drive how we approach the problems of how to influence multiple adversaries. The issue then becomes what information content needs to be emphasized and what content needs to be suppressed. The resulting actions taken by the United States should be driven by these goals of positive and negative information content.

Each member of the secondary target audience is presented with a specific unique information campaign based upon the American action. This information campaign takes into account the target's political, cultural, religious aspects as well as other significant factors. Once American decision-makers take into account that all actions contain information content, they can identify the content's positive and negative aspects for each target audience.

Taking all the target audiences into account allows us to tailor an information campaign that will achieve maximum positive effect while minimizing negative repercussions of the primary action taken by the United States. The effects of the information content of the United States action upon the primary and secondary target audiences should be a significant factor when determining what action is taken. A primary action taken in a specific theater has an impact in every other theater and therefore national and theater CINC driven actions should take into account the

secondary effects in all theaters when planning, while still ensuring the primary action achieves the stated objective. Failure to do so may cause a net negative effect worldwide from a specific American action, where an action to stop a course of action in one part of the world is done in such a manner as to cause an increase in undesirable actions elsewhere in the world.

F. THE HYPOTHESES

Deterrence and coercion theories contain several components that are translatable into variables for American policy makers to consider when addressing how to prevent hostile regional hegemonies and hostile coalitions. This thesis will address five different hypotheses that may help to achieve national security objectives. Four of the hypotheses are directly derived from the literature on deterrence and coercion. The fifth hypothesis implicitly emerged from the Watman et al work, but was truly driven home by our case studies and does not neatly fall into any component of the theories and therefore is a relatively unique perspective of addressing this problem, especially from an American policy point of view.

We will test the thesis that successful deterrence and coercion are positively related to our hypotheses. Our hypotheses are:

- 1) Demonstrating resolve through statements of perseverance improves deterrence and coercion.
- 2) Maintaining a forward presence (real and/or virtual) creates a more favorable local balance of power and improves the ability to influence regional actors.
- 3) Maintaining a forward presence (real and/or virtual) creates a more favorable local balance of power and improves the ability to influence regional actors.

- 4) Demonstrating relatively superior capabilities vis-à-vis adversaries improves deterrence and coercion measures.
- 5) Creating strategic distractions for adversaries can prevent confrontational actions by motivating leaders to concentrate on problems for which confrontations with the creator of the distraction are not a solution.

When applied in a certain amount or manner to a particular situation, the hypotheses become variables. We argue that by implementing these hypotheses American decision-makers will be able to increase their deterrent and coercion efficiency and effectiveness.

The first hypothesis is that demonstrating resolve through statements of perseverance improves deterrence and coercion. This hypothesis is derived in part from the probability of cost function of cost-benefit analysis and also the Watman et al discussion of credibility (pp. 57-59). The adversarial states must believe if the Americans or their allies are confronted, the United States will follow through on its commitments and will fight to victory regardless of the cost.

The next hypothesis is that maintaining a forward presence (real and/or virtual) creates a more favorable local balance of power and improves the ability to influence regional actors. This can be measured in terms of the local balance of forces (Huth, 1988, p.41) and the timing of the arrival of forces (Watman et al, 1995, pp.67-69). An important aspect of forward presence that must be accepted is that it can be real or virtual. Real forward presence is physically having forces on the ground directly opposing the threat. An example of this is the thirty thousand troops stationed in South Korea. Virtual forward presence, however, can be a combination of troops in relatively small numbers physically present and a known force that can be projected into a theater in a timely manner that is remote from the threat's direct border. It can also be almost

purely a force projection scenario where there are no American troops in a region, but there is a force ready to gain entry into the area if necessary and it is known to the threat country that the virtual force exists and will respond. Examples of virtual forward presence are a Marine Expeditionary Unit afloat or a bomber wing in Missouri that can strike anywhere in the world.

What constitutes a “viable” American real and virtual forward presence balance is controlled by the perceptions of the adversaries’ leadership and varies from person to person, state to state and region to region. What may be a valid and effective force mix in one region may be considered threatening or impotent in others. But given the operational tempo and force limitations facing the American military, the efficiency of virtual forward presence must be considered and maximized in every region when applicable.

The third hypothesis we developed is that maintaining a forward presence (real and/or virtual) creates a more favorable local balance of power and improves the ability to influence regional actors. The deterrence and coercion literature refers to this as protégés and alliances in Huth (pp.44-46) and the concept of ally in Watman et al (p.15). Huth does not consider the alliance of multiple states in coalition against a state, but merely between the power and the protégé. We believe that we must extend Huth’s logic and consider multiple party involvement and multiple alliances spanning the globe to be an even stronger deterrence measure. The two major theater war policy of the United States encourages the use of coalitions in confronting adversarial states. It theoretically allows the United States to exert influence in multiple regions simultaneously while minimizing troop commitment. A neighboring regional or multinational force may

physically confront the adversarial state, but the adversarial state should know that it is, in effect, also facing the United States. Even if committed elsewhere, the United States can respond through the effective and efficient use of coalition partners to augment our forces and allow us to better distribute our combat power over multiple regions to facilitate ultimate American victory.

The fourth hypothesis derived from the literature is that demonstrating relatively superior capabilities vis-à-vis adversaries improves deterrence and coercion measures. To paraphrase McRaven, relative superiority is a condition that exists when a force gains a decisive advantage over another force in a meaningful manner. The value of relative superiority lies in the ability to identify those positive forces that influence the success of the mission (p.4). While not referring to the hypothesis directly, Huth and Watman et al account for relative superiority when they discuss the importance of the perception by the attacker of the balance of forces (Huth, 1988, p. 41; Watman, p. 57).

The United States plays a leading role in the economic, political, information and military arenas of the world today and will most likely play a similar role into the foreseeable future. Our strength in these arenas must be parlayed into effective and efficient actions in dealing with adversarial states. American decision-makers must utilize these strengths to exploit the weaknesses of adversarial states, both in the physical and psychological realms. Wherever possible, decision-makers must take advantage of our comparative advantages in a fashion that prevents adversarial states from countering our actions.

The final hypothesis we have identified is that creating strategic distractions for adversaries can prevent confrontational actions by motivating leaders to concentrate on

problems for which confrontations with the creator of the distraction are not a solution. This concept does not translate directly from the literature, and appears to be a new hypothesis not found in the literature as we are presenting it. Watman et al describe the motivations of regional adversaries. Threatening a higher priority motivation will cause the attacker to shift focus and resources as necessary from lesser priorities (p.35). The idea of strategic distraction is to exploit the limited resources and perceptions of the adversarial states and their leadership in particular. If issues that are of paramount interest, at least to the regime leadership, consume an adversarial state, then adversarial states will not be able to effectively pursue other matters of magnitude. Based upon but not taken directly from Watman et al we have created a hierarchy of motivations for authoritarian and autocratic regimes. Shown graphically in figure 4, this hierarchy can describe what motivation will distract an adversary leader. While such a leader may care about the global balance of power and wish to weaken the United States anywhere in the world if possible, he will forgo any such opportunities to deal with problems presented by the local balance of power. Even local balance of power issues will take a backseat to regime stability and survival issues. Such a leader can be expected to abandon any chance at the survival of his regime if he feels that doing so is his only hope of personal survival. What other possible motivations could have a place in this hierarchy and whether such hierarchies vary from leader to leader would probably make excellent topics for further study but are not necessary to describe how strategic distraction works. Simply put, adversarial states will not invade their neighbor or disrupt the region while their regime or personal survival is threatened by a problem the adversarial leadership does not see as amenable to solution via external confrontation. If the adversarial

leadership does choose to attempt to solve the problem via external confrontation they are likely to be very hard to deter since they are dealing with problems that Watman et al describe as involving a less or unacceptable status quo and prospects for loss (p.24).

Creating strategic distractions is not something the United States normally does, but it is a concept that may be very useful in dealing with certain types of regimes that place personal leadership's interests above those of their nation's or populace's interest. Relatively small actions with little negative content for the United States can generate large results when the proper leverage points are identified.

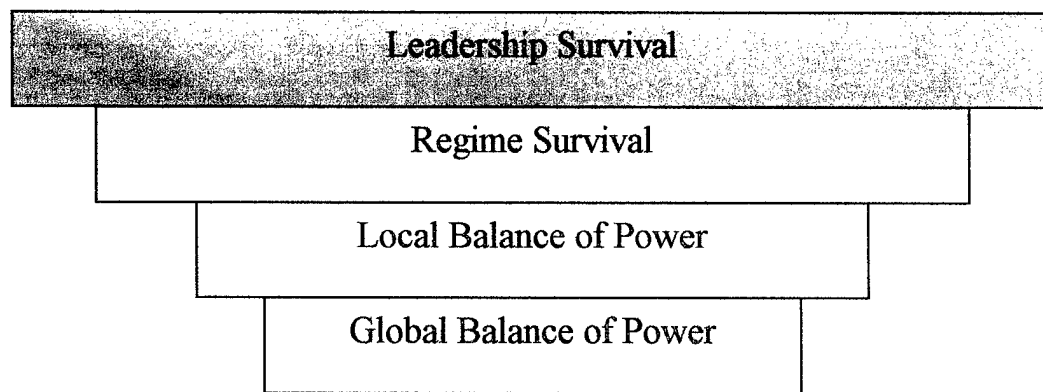


Figure 4 The Hierarchy of Authoritarian Regime Motivations

G. CASE STUDIES

Have other superpowers used these concepts to deter single or multiple adversaries in the past? We examined past great powers to see how they deterred their adversaries and maintained their preeminent positions in the world. We chose the Roman Empire, the Byzantine Empire and British Empire, as they all managed to maintain their prominence after an initial expansion phase and did so using methods that may be translatable into modern-day settings. These three case studies contain elements

of culture, objectives and history that are carried over into American society today. Also, the decision-making rationality of the actors in these case studies is understandable to American policy-makers today. Other potential case studies, such as the Greek States, Mongols, Alexander the Great's Macedonian Empire and Ancient China were considered, but dismissed due to either a lack of present-day applicability for American decision-makers, or because they lacked a sustainment phase after expansion. For example, the Mongol Empire is an incredible study in how to influence adversarial decision-makers. However, we decided the modern equivalent of building a tower of skulls outside a city's walls is probably not a desirable American national security policy. Therefore, the applicability and worth of the Mongol case study is less than those chosen.

The case studies selection needs to provide enough variation to test the hypotheses. These case studies offer a contrast of perspectives, looking at a diverse spectrum of scenarios. The Byzantine study is looked at from a strategic, sweeping point of view covering the whole empire over several hundred years. The Roman study is more operational, looking at a particular theater over time and is more limited in scope than the Byzantine study. The British study is even more finite as it looks at a relatively small campaign and the battlefield application of the variables. A full gamut of strategic to tactical applications is reviewed through the various case studies. The decision-makers need to realize that these hypotheses have some degree of relevancy at every level and the variables can be applied in any situation. The issue is whether the hypotheses are a valuable tool in every one. The case studies will see how valid the toolbox is in the different scenarios over space, time and level of application.

The Roman Empire was the first western empire that undertook a significant sustainment phase, in that it expanded its sphere of influence and then methodically maintained its control as opposed to conquering, extracting anything of value and then moving on, leaving the conquered area to recover on its own. Following the expansion under the republic the Roman Empire's growth slowed for the most part and the Romans began dealing with neighboring states using methods other than conquest. The Roman military, "the legion", was thought to be peerless in the ancient world, similar to the United States military today. The Romans did not, however, rely solely on military might. Limitations on the number of citizens available to serve in the legions continually limited the Roman army's overall size. Additionally, an inability to rapidly move forces across the empire eliminated the option of moving sufficient forces to every potential trouble spot in a timely fashion. This required the Romans to maximize the secondary effect of actions to prevent adversarial coalitions and deter an overwhelming attack from occurring. Also, the leadership of Rome changed frequently, once again a trait shared by modern day America. Yet even with this turbulence, the Romans maintained a coherent foreign policy and sustained their empire for over 300 years.

The Byzantine Empire inherited the eastern portion of the Roman Empire and maintained it against multiple adversaries for approximately 1000 years after the fall of Rome. This is perhaps the longest successful maintenance of an Empire in history. The Byzantine Empire was in many respects a continuation of the Roman Empire, though it possesses enough uniqueness to be considered a different and worthwhile case to study. The Byzantines took the existing structure supplied by the Romans and then utilized different measures and techniques as their changing world dictated. The Byzantines

made great use of nonmilitary aspects of their power to insure that their military challenges could be met with the forces they had available. The Byzantine Empire showed great perseverance derived from their belief in their political and religious superiority to outlast their opponents and worked over the course of generations to achieve their goals.

The Byzantines believed that, as the Roman Empire in Christian form, they were destined to maintain the Empire created by the Romans. They continued the Roman struggle with the Persian Empire and defeated an enemy they, and the Romans before them, had been fighting for 600 years. They campaigned against the Bulgars for eighty years without losing faith in their inevitable victory.

They also took advantage of their economic might and diplomatic prowess to create or capitalize upon an ongoing series of strategic distractions. The Byzantines used economic subsidies, strategic marriages, the bestowing of Byzantine titles and the Orthodox religion to control the legitimacy of many neighboring states and sow discord within and among its neighbors. The success of these efforts generally meant that the Byzantines could deal with their neighbors individually, without having to deal with coalitions or alliances among their adversaries.

The Byzantines managed to create a fairly stable border with the Islamic World from the seventh to eleventh centuries based on a virtual forward presence scheme. While it could not always prevent raids on Byzantine territory, it was able to stop these raids from leading to the permanent conquest of Byzantine territory.

The British Empire of the nineteenth century was one of the first truly worldwide empires. The saying, “the sun never sets on the British Empire” was true at that time.

The empire was sustained despite limited resources, both human and material, that existed in the United Kingdom.

This was in part maintained by the ability of the government to use its naval superiority to advantage in maintaining a global sphere of influence despite a relatively small and limited army. In a day and age where the ability to navigate the oceans effectively and efficiently relative to your competitors was paramount, the British were the supreme naval force in the world. Through its navy, the British were able to leverage their ability to control or influence sea lines of communications to maintain a comparative advantage in a critical aspect of power projection. The navy was both a form of real and virtual presence.

British naval superiority was also commercial in nature. The ability to move goods to and from distant colonies and markets safely and in large quantities gave England leverage with other nations and provided the capital for maintaining and expanding its sphere of influence. The economic benefit brought by the British to the markets in the world facilitated a perception in the third world that being a part of the British Empire brought prestige and stature to these countries or colonies. In turn, the British used this to emplace relatively small residual military, commercial and governmental forces throughout the globe, using these forces to oversee the training and supervision of native forces and governments with minimal expenditure of the limited British capital. The windfall of falling under the umbrella of the British Empire was deemed worth the cost for many populations. Once embedded, the doctrine of all things British resonated throughout the world in the form of self-perpetuating military, diplomatic and economic influence.

In a day and age of sea power, the British were unsurpassed. They were able to turn their relative superiority, or comparative advantage, to their favor and the British were able to maintain a global presence that far outstripped their population, material and historical limitations. Using its comparative advantages wisely, the British were able to maintain a role in all areas of the world, especially Europe, even if it did not have or want to commit ground forces. The ability to control or influence far flung negotiations and disputes often without having to go directly to war with large armies, and being able to convince the ground powers to recognize and capitulate to a sea power, is a tribute to the British's ability to leverage their strengths.

In order to compare these three case studies, we will evaluate how each performed when considering our hypotheses. Each empire will receive a grade along a three plusses (+++) to three minuses (---) scale for each of the five variables. A score of three plusses indicates that the receiving empire recognized the utility of a particular variable and used it successfully in conjunction with other variables as part of a coherent deterrence or coercion campaign without serious negative side effects. A two plus ranking indicates an empire recognized the value of a variable and implemented it well. However, they never integrated that particular variable with the other variables in a deliberate plan. A single plus indicates that an empire attempted to use the variable but had limited success or they failed to consider serious negative effects of their implementation of the variable.

A score of one minus signifies that the empire did not employ the variable in their campaign when the opportunity to do so presented itself. An empire is given two minuses if it was susceptible to the use of the variable against them, either deliberately or

accidentally. A score of three minuses would indicate that failure to account for use of a particular variable against them directly contributed to the fall of the empire.

H. OUR THEORY

When looking at the issues confronting the United States in attempting to satisfy segments of its National Security strategy, the deterrence and coercion literature seem two-dimensional and therefore too limited in nature. While factors of the “ripple-effects” of previous actions of an actor are of some value in some of the calculations, the models are largely limited to actor 1 and actor 2. The value of actions on parties other than actor 1 and actor 2 are either minimized or unaccounted for. By looking at how the “ripple-effect” spreads, we hoped to account for the secondary effect of actions. We identified information as the mode that the secondary effect is transported. Actions on the primary target impact the perceptions and value judgments of those that observe the action.

By consciously harnessing the information content passed to the observers, we are able to bring specific additional impact on targeted parties beyond the immediate target. This in effect makes the new model three-dimensional and accounts for multiple adversaries in a single action. America may or may not already use the concepts embodied in our hypotheses as part of deterrence and coercion. But, by using them as primary actions in the three-dimensional model, the U.S. can account for the impact these actions have on relations with adversarial states beyond just the primary target. It allows American policy makers to be more efficient in their utilization of actions, to get the proverbial “biggest bang for the buck.”

We will use the case studies of the Roman, Byzantine and British Empires to test how our hypotheses on the value of perseverance, forward presence, coalition, relative superiority and strategic distraction are or are not borne out. In turn, we will show how these empires, wittingly or unwittingly, used “perception management” to stabilize their world and maintain their extended influence.

II. THE ROMANS

The first empire we will look at is the Roman Empire. In its heyday, Rome ruled much of the known world, from Iberia in the west to Armenia in the east, from Germany in the north to the Sahara in the south. Rome's capability to maintain control over this empire, in spite of frequent internal turmoil, is a testament to the Romans' skill as diplomats and soldiers, and their story has many valuable lessons. This case study will focus on Rome's efforts to maintain stability along its northeastern border during the reign of Tiberius, starting in 14 A.D. and continuing to the end of Trajan's reign in 117 A.D.

As the Roman Empire matured, internal conflict eventually colored every decision made by the emperors. However, the time frame selected was one of the periods in Roman history when the emperors, generally, were not completely motivated by regime survival. For this reason we can study their methods without having to filter out totally self-serving motivations, given that they were often operating at higher motivational levels (i.e., they were often acting "for the good of the empire")

Another factor that makes this theater interesting to study is the information environment. The states that bordered the Roman Empire along the Rhine and Danube were in constant contact with each other through trade, diplomacy and military conflict. Because of this, the Romans conducted deterrence in an environment where information moved in an uncontrollable manner. The situation was, in some ways, similar to the U.S. position in the world today.

The Rhine and Danube rivers formed Rome's Imperial boundaries in the north. Beyond them were some of Rome's most troublesome neighbors, including the Germanic

tribes, the Dacians and the Sarmatians. As early as 16 A.D., Roman leadership developed a foreign policy strategy that actively sought to prevent collusion between potential adversaries, particularly the Germanic tribes.

Tiberius used a classic example of this strategy in 16 A.D. He decided to call off the highly successful but costly reprisal raid of Germanicus and, instead, reached an agreement with Maroboduus, one of the two principal German leaders. The agreement was simple. In return for subsidies, Maroboduus would not enter into any anti-Roman pacts. Maroboduus, true to the agreement, refused to enter into an agreement with Arminius, the other German chief. One year later, rather than attacking the Romans across the Rhine, Arminius attacked Maroboduus. Maroboduus lost the ensuing war and was driven into exile in Roman territory. However, because of losses suffered in his conflict with Maroboduus, Arminius was no longer in a position to threaten across the Rhine. Ultimately, the Romans achieved their goal of preventing an attack across the Rhine, and did so without the use of their own troops (see Luttwak, 1976, pp. 36-37).

The ultimate goal of the client system was to keep potential opponents at each other's throats and not working together against Rome. This system resulted in the emergence of Roman client states along the Rhine and Danube. These clients received rewards such as subsidies and Roman citizenship, but no actual promise of Roman protection should they come under attack. This allowed the Romans to support friendly regimes while not requiring Rome to take military action should one of them become threatened. This "client management" system was still in use during Trajan's reign, and is described in Tacitus' work *Germania* published in 98 A.D. (Luttwak, 1976, pp. 31-39).

This arrangement also allowed the Romans to repel potential invaders before they entered Roman territory achieving what Arther Ferrill refers to as “ defense in exterior depth.” Exterior depth enhanced Rome’s forward presence capabilities. Because the Romans could strike out from their own borders and conduct the conflict in the territory of a client state, the Roman army effectively enjoyed the initiative of the offense while maintaining the security of fallback positions at their frontier fortifications. Furthermore, this system lowered the manpower requirements of the fortification belt by allowing the Romans to mass defensive forces at key points if they needed to defend at the border. Exterior depth gave the Roman army a tremendous advantage but it also created a liability. Because the army had to remain close to the frontiers it was not available to deal with threats to the Emperor himself, who normally resided in Rome. In order to maintain preclusive security and external depth the emperor had to be politically secure so the army could remain forward deployed. During the first and second centuries the emperors had this security. However, in the third century when the political security of the emperor deteriorated so did exterior depth and preclusive security (Ferrill, 1991, pp. 75-78).

Roman efforts to buy off potential adversaries were sometimes ineffective and Rome had to take direct action against a neighbor. However, the Romans made great efforts to maximize the deterrent value of any coercive operation they embarked on. Rome wanted every potential adversary to understand that while the actual individual reigning as emperor may change--the goal of eliminating any enemy of Rome would be unwaveringly held and absolutely seen through. An excellent example of this policy was

Rome's handling of the kingdom of Dacia on the Danube (in the area of modern day Romania) and its king Decebalus.

In 89 A.D., during the reign of Domitian (81-96 A.D.), Dacia was well on its way to mounting a credible threat to Roman hegemony along their northeast frontier. Dacian forces frequently mounted raids across the Danube into the province of Moesia. The Dacians had a long and troubled past with their Roman neighbors. For over a hundred years, various emperors had tried different methods of quelling the Dacian problem.

The Dacians were unique in the area; first, they had strong central control and secondly, they were wealthy when compared to other states bordering Roman territory. For these reasons, punitive expeditions and attempts to turn them into a client state, which had worked well for Rome in dealing with the Germanic tribes, failed in the Dacian case. The Dacians were simply not sensitive to these activities. The Emperor Domitian determined that they would have to be dealt with by means of a military intervention. However, Decebalus' forces turned out to be more formidable than Domitian had anticipated. After several battles Domitian was distracted by a revolt by Antonius Saturninus, the legate of upper Germany along the Rhine, and forced to withdraw and pay Decebalus a tribute to ensure that the Dacians would refrain from raiding the frontier (Grant, 1978, p. 293; Luttwak, 1976, p. 100).

The Dacians maintained the upper hand for only ten short years. In 101 A.D. the Emperor Trajan invaded Dacia with a much larger force, which consisted not only of standard Roman legions and their auxiliaries but also a formation called the *numeri*. When most people think of the Roman military the image brought to mind is the Legion, and this is essentially correct. However, Roman military formations consisted of much

more than heavy infantry. Besides the legion, Roman formations at the time of the Dacian campaign consisted of two other elements, the *auxilia* and the *numeri*.

The *auxilia* consisted of non-Romans, and was equipped and organized to be lighter and more mobile than the citizen-only Legion. Those who completed a tour of service in the *auxilia* were granted citizenship. The *auxilia* marched under Roman standards but were distinguishable from the Legion by both form and function (Luttwak, 1976, pp. 42-45). Thus they often reminded potential opponents of Rome's ability to call upon numerous vassal states and to field immense and diverse combined arms formations.

The second element, the *numeri*, was a more ethnically distinct and independent type of formation. They were allowed to retain their standards and unique battle cries. Additionally, they were self-equipped and rarely resembled the Roman formations with whom they marched.

By 106 A.D., the kingdom of Dacia was a Roman Province, its capital destroyed and Decebalus driven to suicide (Grant, 1978, pp. 293-295). On the surface Trajan's action against the Dacians appears to be an act of military conquest and little more. In fact, when looked at in a purely strategic light, it was an illogical move. Prior to the invasion the eastern frontier was easy to defend as it used the Danube River as a natural fortification. Once Dacia was conquered, Rome was required to defend an additional 370 miles of border. Additionally, the new province formed a dangerous salient into the hostile territory of the Sarmations (Luttwak, 1976, p. 100).

However, Edward Luttwak suggests that, when the action is taken in context with the exigent strategic situation, it makes perfect sense. The Romans were facing

challenges up and down their northeastern border and Decebalus' intransigence continually reminded Rome's opponents that Rome could be successfully resisted. Rome's tenacity in the elimination of the Dacian threat sent a message to these would-be challengers. If you oppose Rome you will be destroyed. It is much better to accept Roman subsidies (Luttwak, 1976, p. 100).

The Dacian salient also created an opportunity for a loss of face as well as gain. If the Romans could not hold the salient, then the effort and effect could have been a potential waste. In order to maintain the salient the Romans used an aggressive forward presence program in the new province.

Much like Roman efforts in Britain years later, in Dacia the Romans used what were called the *Limes Porolissensis* to secure the territory. The *Limes* consisted of a series of small fortifications along the Carpathian Mountains connected by roads and/or low walls. These small outposts were backed up by strong garrisons at the Danube and in the interior of the salient (Luttwak, 1976, p. 100). This is not an abandonment of the strategy Arther Ferrill refers to as "preclusive security"; rather it appears to be a modification of the strategy to fit the demanding terrain of the area (Ferrill, 1986, pp. 25-26).

From a tactical prospective this move made perfect sense. Additionally, there was a strong psychological impact from this action as well. The first impact of this fortification belt was the clear signal that Dacia was and would remain a Roman territory. Furthermore, the garrisons left little question as to whether the Romans intended to fight to maintain the territory.

The road system and walls between the forts served a purpose beyond just moving troops and supplies rapidly. Any Sarmation movement into Dacia through the Carpathians would have to cross one of the roads. Just as the Danube served as an indisputable line of demarcation prior to Trajan's Dacian campaign, the walls and road system served the same purpose. Taken in total, the Roman plan for forward presence clarified for the Sarmations and any other challenger who wished to exploit the salient what the cost of such an action would be. That is to say, if you crossed the roads, you were clearly in Roman territory and the Romans fully intended to defend it.

Elsewhere along the frontier the Romans used their military presence to enhance security as well. Along both the Rhine and Danube, the Romans established fortresses, usually on the far (or enemy) side. Forts were also established at known fording sites to monitor and control these crossing points. Furthermore, the forts served as signal posts that facilitated communications along the extensive frontier (Luttwak, 1976, p. 133). These fortifications usually housed one or two Legions. These fortresses provided not only a strong defensive presence but also allowed for a significant striking capability (Elton, 1996, p. 60).

Additionally, the Romans had designated flotillas for both the Rhine and Danube. These flotillas patrolled the river and provided a Roman presence along the rivers (Luttwak, 1976, p. 78). These flotillas were also, weather permitting, capable of moving men and equipment to trouble spots quicker than most other means of transportation available. Together, the fortification system and the riverine patrols provided security along the rivers and at strategic crossing points.

In order for the Romans to have deliberately harnessed the secondary effects of deterrence actions, they had to have shown some appreciation for the power of information. To be sure, the Romans faced a much different situation than the challenge faced by today's governments. Today, international media rapidly pick up stories and disseminate them. The challenge is controlling the content of the message. In Roman times the challenge was often dissemination itself. How did the Romans disseminate information? Two examples, which survive to be studied today, are architecture and currency.

Two examples of Roman architecture conveying information are the Column of Trajan and the Arch of Titus. The Column of Trajan graphically depicts over 2500 human figures and recounts the history of Trajan's Dacian war. The Arch of Titus vividly depicts the sacking of the Jewish Temple in Jerusalem, one of Titus' major conquests (Grant, 1978, p. 307). The fact that both are located in Rome does not diminish their effect. Any leader or ambassador visiting Rome would see these magnificent structures and be exposed to the message.

Currency was also a method by which Rome disseminated information. Roman currency was pervasive over vast areas, with Roman coins having been found as far east as southern India (Grant, 1978, p. 266). While most client states were permitted to mint their own currency, Roman coins were used as well (Elton, 1996, p.33). Furthermore, Roman coins were a means of propaganda. A perfect example of this was the coins issued following the subjugation of Parthia. The Roman mints issued coins celebrating the "Capture of Armenia." In fact the "capture" was a diplomatic, not military, triumph. However, coinage offered the opportunity for the Romans to send the message they

wished to convey (Balsdon, 1970, p. 96). To this day historians use Roman coins as a reference source to confirm Roman military actions (Balsdon, 1970, p. 124).

While this is not a full listing of every deterrent or coercive action the Romans undertook in their effort to maintain the Rhine/Danube frontier it is indicative of their overall strategy. It is clear the Romans were better at applying some variables than others. Now an analysis of the Romans use of our variables in their deterrence strategy is in order.

	Perseverance	Forward Presence	Coalition	Relative Superiority	Strategic Distraction
Rome	++	+++	-	++	-

Table 1 Roman Assessment

Perseverance- (++) Rome's implementation of the perseverance variable was one of its better traits. Trajan's destruction of the Dacians was a clear-cut example of sufficient use of this variable. Furthermore, it was directed at a broader audience than the Dacians. Trajan intended to send a message to every state in the region; that while you may resist Rome for a while, eventually Rome would finish the fight. Domitian's and then Trajan's constant efforts to solve the Dacian problem are illustrative of Roman tenacity. As stated earlier the Romans were not afraid to incur costs in order to make this point. They were perfectly willing to spend money, time and people to see an action through, even if it meant moving into a strategically disadvantageous position. The only obvious criticism of Roman application of the perseverance variable was that it was implicitly tied to the political security of the current emperor. Any weak emperor who lacked political security, such as Domitian, was in constant jeopardy of being drawn

away from his stated goals. However, during the time-span of this case study politically tenuous emperors were the exception.

Forward Presence- (+++) The greatest success of Roman deterrence was their application of the forward presence variable. Not only was it a model use of military forward presence, but it also influenced trade and the economic balance along the frontier. Roman military installations attracted a supporting community. This in turn resulted in an economic forward presence for the Roman Empire. Additionally, the river flotillas are an early example of virtual presence. While not constantly present at a specific location, they often moved through areas and served to provide a forward presence along both rivers.

The Romans skillfully used troop placements and engineering projects to reinforce both perseverance and relative superiority. Roman forward presence along the Rhine and Danube allowed Rome to exert economic, social and military pressure beyond their borders. The addition of the river flotillas displays a creative use of virtual presence to control a frontier too long to completely fortify. Roman forward presence was well executed and clearly supported other Roman deterrence tenants.

Coalition- (-) While the Romans strove to use coalitions to their advantage, their rationale was ill conceived and produced massive negative results by the end of the third century A.D. While the legion formed a strong base for the army, other critical functions were performed by the non-citizen auxilia and the foreign numeri. As opponents faced the varying units of a Roman army they must have literally perceived that the world was facing them. This effect could not have been lost on the foreign forces serving as part of the Roman force. The army in which they were serving could also be turned on them if

they ever tried to oppose the Romans. Unfortunately, this was not the motivation behind the Romans decision to form coalitions. The Romans moved toward coalitions to gain sufficient combat power (Grant, 1978, p. 295). The army that Trajan used to march on Dacia was clearly a coalition force. However, it was a coalition force constituted to make up for manpower shortfalls in the Roman military not to make the Dacians feel they were isolated. While the initial effect was positive, it led to the increased use of non-Roman forces and the eventual domination of the legion by “barbarians.”

The saving grace of Rome’s application of coalition was their remarkably sophisticated application of passive coalitions. Rome’s use of subsidies is an excellent example of forming passive coalitions. For example, the Romans used these payments to ensure that German tribal chief Maroboduus would not enter into a coalition against the Romans. This was a passive coalition. By doing this, the Romans isolated Arminius, the other major German chief. This strategy effectively isolated Arminius and prevented his planned offensive against Roman territory.

Relative Superiority- (+++) The Romans clearly fielded the finest military of the day, and they would leverage this to deter potential opponents. The Dacian war was a perfect example of the Romans using their military advantage. However, military affairs were not the only area where the Romans put relative superiority to work for them. Once again the use of subsidies is an example of this. The Roman used their economic advantage to buy off potential adversaries and prevent the formation of hostile coalitions. This is a clear use of economic relative superiority. An overall strategy to use economic relative superiority to form passive coalitions was critical to Rome’s strategy to maintain stability along the frontier. This use of economic relative superiority was when tied to

the economic inroads created by Rome's outstanding application of the forward presence variable, produced an effect greater than either variable could on its own.

Strategic Distraction- (--) The low point of Roman deterrence was their understanding of strategic distraction. For example, Domitian's primary objective during his reign was the conquest of the kingdom of Dacia. However, he had to abandon this objective when he faced a threat that was higher on his scale of priorities. This threat was the legion revolt in Germany. It is doubtful that the revolt was deliberately stimulated to stop his actions in Dacia. Yet, that does not negate the fact that it effectively ended his offensive actions in Dacia. This example conclusively shows that strategic distraction is a method of deterrence; unfortunately it worked against the Romans. Nor did the Romans appear to employ strategic distraction to their advantage. They did employ divide and conquer tactics when dealing with the Germanic tribes. However, they never attempted to deter by giving an opponent a more important problem to deal with. Even more damaging, the Roman Emperors were themselves eminently distractible due to their ever-increasing political instability.

While it is undeniable that the northeastern frontier of the Roman Empire did collapse, the fact remains the Romans held this frontier against numerous opponents for over 200 years. The Romans' greatest downfall was their failure to recognize the potential long-term consequences of cost saving measures which motivated their shift to coalition- style warfare. The Romans were also hobbled by the crumbling political security of their leadership. This resulted in the leadership keeping the legions close to Rome instead of on the frontier.

However, the Romans skillful use of military, economic and political pressure during the first two centuries A.D. allowed them to hold this highly tenuous border. Their use of economic relative superiority and forward presence were second to none. Moreover, Rome used these strengths together to gain a synergistic effect. Furthermore, the Romans saw the value of influencing more than one adversary with a single stroke. They conducted their policy on the Rhine/Danube Frontier accordingly. Additionally, they displayed an understanding of the value of information and attempted to harness its power. Overall, Roman deterrence strategy along the Rhine and Danube rivers was, for the first 200 years of the empire, well executed, cohesive and generally quite successful.

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III. THE BYZANTINES

As the successor of the Roman Empire, the Byzantine Empire lasted for over 1100 years (Norwich, 1997, p. xxxvi). For most of this time it faced threats from at least two fronts. Many of the forces arrayed against the empire threatened its very existence. Others merely threatened to wrest away portions of Imperial territory or otherwise damage Byzantine interests. This successful defense of territorial and political integrity makes it perhaps the most successful defense of an Empire in history. Its defensive techniques are certainly worthy of study. This case study will show how the Byzantines used all the variables described in this thesis over the period between the years 680 and 1204 and how they contributed to Byzantine success and eventual failure.

The variable of forward presence as a deterrent, the visible signs of the might of an empire used to deter aggression, is of use mainly in defensive or coercive situations. If the empire is on the offensive in an area, it is not trying to deter its enemies there, only defeat them. In the Eighth and Ninth Centuries the Byzantine Empire was on the Strategic Defensive. The initial Islamic onslaught had cost them most of the non-European territorial gains achieved by Belisarius. They stabilized the situation along a semi-permanent border on the edge of the Anatolian Plateau in present day Turkey. The empire built a forward presence scheme that was very successful in keeping the Muslim armies from achieving a permanent conquest of territory on the Anatolian Plateau. The Empire did not achieve peace. The Muslim imperative to spread the faith with a sword ensured that a seasonal attack was inevitable. The Byzantines did convince the political leaders at both the local and Caliphate levels for almost three hundred years that permanent conquest was not possible.

The Byzantines achieved this success by pursuing three goals. The most important was the survival of the thematic, or provincial army. The Empire had two types of armies in the eighth and ninth centuries, a central professional army based on the Emperor's bodyguard, and a series of regional armies based on soldiers who were paid from the proceeds of a piece of land they were given by the state.

These thematic armies, named after the regional divisions of the Empire, were essentially irreplaceable. A region or theme could easily take a generation to reconstitute an army. If the army was destroyed, the Muslims could take the time to besiege cities and actually conquer territory that would require the central army under the Emperor to reconquer, if that was possible.

Aside from garrison troops manning forts in the passes and some troops in the major walled cities, a thematic army was essentially a part time force that needed time to be called up. A permanent watch was kept on the border and a signaling system of bonfires was used to alert the thematic commander. This also alerted the general populace and showed the raiders they had been discovered. While the army was gathering, scouts kept track of the invading army and warned people in the projected path of the raiders to take shelter in the nearest fortified town. The aim of this warning was to remove any supplies the raiders might use into a fortified position before it could be captured.

The overall goal of the second part of the Empire's strategy was to minimize any possible gain in terms of booty, slaves and supplies the attacking force might gain from raiding. If the Byzantines could successfully prevent the raids from being profitable, they could deter both the raiders and the local commander who sent them. In an attempt to

make sure that any raid made into Byzantine territory resulted in a net loss for, at least, the local enemy commander, an irregular force was generally dispatched as soon as possible on a counter raid. The goal of denying supplies to the raiders was also one of the reasons the Empire kept a no man's land on its border where no farming took place.

In addition to denying supplies to the invaders, this no man's land had the psychological effect of delineating the border as an area that showed nothing to be gained by crossing it. Maintaining a no man's land also showed the economic might of the Empire by intentionally not using farmable land. The Empire partially mitigated this cost by trying to maintain as much of its no man's land as possible in what it considered to be the opposing side's territory. It used its irregular raiding force to try to keep the immediate border territory empty.

The third goal of the Byzantine army was to gather at a point where it could intercept the raiders. This usually occurred as the raiders retreated from Byzantine territory. The thematic army would attempt to inflict a defeat upon the raiders if one could be achieved at small enough cost. Even if the Byzantine army chose not to fight a decisive battle, they would try to pose a big enough threat to make the raiders abandon their booty. The thematic army also generally posed a threat great enough to prevent raiding force and local enemy commanders from engaging in the siege warfare necessary to permanently conquer territory.

This defensive scheme created an effective virtual forward presence. The bulk of the thematic army was engaged in economically productive work. The no man's land, irregular raiding force, and system of lookouts and signal fires reminded the opposing local commander that he would pay the price if the seasonal raiding army demanded by

the Islamic Jihad chose to attack the Byzantine Empire from his territory. This meant that each local opposing commander maneuvered to avoid having the jihad launched from his territory. This tended to channel the jihad into one large unwieldy raiding force massed in the territory of the commander least able to convince the central government to send the raiders somewhere else. This larger force was also harder to sustain in Byzantine territory and slow enough to allow the thematic army to gather to defeat it.

The Byzantines used the variable of coalitions in three ways. The way they preferred to use forces from outside the Empire was as mercenaries. The Byzantines used mercenaries extensively in both the central and thematic armies in essentially all positions. Their status as paid professionals often made them more reliable than the local theme based, part-time troops. Many mercenaries served for long periods of time and developed the same discipline the professional Byzantine units prided themselves on. This made the best mercenaries as hard to replace as the thematic armies had been and helps explain the collapse of the Anatolian provinces after the Battle of Manzikert in 1071. The Byzantine reliance on mercenaries increased over time. As the Empire went on the strategic offensive in the tenth and eleventh centuries, part-time soldiers as raised by the themes were less useful.

The Emperor kept a bodyguard of foreigners, called Varangians, who were supposed to be immune to imperial politics. Other important parts of the army, however, were usually Byzantine. The very heavy armored cavalry that led the charge were generally Byzantine as were most of the senior commanders. The thematic army from the province in which the central army was operating and any other themes the central army traveled through enroute to the frontier also contributed troops to major operations.

This Byzantine element to the army prevented over reliance on Mercenaries and ensured that only the Byzantines could create the type of armies they used so successfully in the eighth to eleventh centuries. When the thematic armies declined, the Byzantines were forced to rely more on mercenaries and lost most of their armies' relative superiority over other regional armies.

The second coalition type grew out of the mercenary coalition concept. If a unit of foreign troops was large enough, it might be allowed to fight under its own leaders instead of Byzantine unit commanders. This usually occurred when vassal buffer states sent troops to participate in a campaign. If the vassal buffer state was large enough to contribute substantial troop units and the vassal ruler himself came to lead them, a local coalition would be formed. This rarely involved more than one vassal king at a time. The Byzantines still did not consider this a coalition amongst equal partners. They thought no one was equal to the Emperor. But, this could greatly increase the size of the army available for a campaign. The Byzantines often paid the vassal king's army to ensure its loyalty to Byzantine aims.

When the Emperor, Alexius I, wrote to various leaders in Western Europe, he intended to recruit mercenaries for the first type of coalition. Pope Urban II turned this on its head when his appeal to the Council of Clermont resulted in the First Crusade. The resulting army, led by various kings and nobles of Western Europe, had to be treated as the second type of coalition.

Furthermore, the Crusaders were not content to be subordinate to the Emperor. The initial successes of the Crusaders were not aimed at the strategic terrain in Anatolia the Byzantines needed to recover but at the holy land. The resulting crusader states were

often as hostile to Byzantium as they were to the Muslims. This failure to control the crusades as a Byzantine-led coalition eventually ended in the disaster of the Fourth Crusade; which, at the urging of the Venetians naval force that transported them, sacked Constantinople in 1204 and set up a Latin Emperor. The Byzantine Empire lasted another two hundred and forty nine years but never recovered from this calamity.

The third style of coalition formed by the Byzantines involved the nomadic steppe peoples the Byzantines met along the northern shore of the Black Sea. Through bribes and flattery, the Byzantines were often able to convince one or another of these nomadic groups to attack Byzantium's foes, whether they were the Bulgars, the Russians, or most often, other groups of nomads. This was usually not done in conjunction with a Byzantine army. While not a coalition as we would define one; the Byzantines did sometimes take advantage of foreknowledge of one of these attacks to attack the same foe on another front.

The third variable, which is a particular strength of the Byzantine Empire, is strategic distraction. While individual enemies sometimes posed a threat to the survival of the empire, the gravest threat was the possibility of an alliance of Byzantium's foes. The most desperate moments for the empire occurred when coalitions of enemy forces threatened to conquer Constantinople. When the coalition of Venetian and Crusader forces sacked Constantinople in 1204, it sent the Empire into a decline from which it never really recovered. The primary aim of Byzantine diplomacy was to prevent more than one of the enemies of Constantinople from attacking simultaneously either by design or by accident.

The Byzantines excelled at producing strategic distractions for their opponents. The Byzantines relied on an outstanding intelligence network for strategic warning and to amass a storehouse of information, kept by the bureau of barbarians, on the strengths, weaknesses and leverage points of each foreign nation known to the Empire (Diehl, 1957, p. 54). This information allowed the Empire to take advantage of periods of weakness or, if possible, create them when needed. The basic tools employed by the Byzantines to exploit their intelligence involved control of legitimacy and judicious use of the Empire's economic superiority over its neighbors.

The Byzantines ruled in an age of kings. Legitimacy flowed from birth, position, and the church. The Byzantines were experts at using marriage to Byzantine nobility, proffering of Byzantine titles and honors, and the central position of the patriarch of the orthodox church to control the legitimacy of surrounding states when ever possible. This control allowed the Byzantine Empire to challenge the legitimacy of states that opposed the Empire. These tools worked mostly against the Christianized Kingdoms on the European and to a lesser extent Middle Eastern borders of the Empire.

The ability to incite nomadic peoples into attacking their foes, mentioned in the coalition discussion above, also acted as a strategic distraction. Since most other regional states could not both fend off a nomadic invasion and simultaneously confront the Byzantines, such incitement of nomadic invasions was usually a strategic distraction.

The Empire attempted to convert nomadic steppe peoples to Christianity not just as a religious duty but also for the increase in influence the Empire would gain through the orthodox hierarchy. These tools were somewhat less useful in dealing with the Muslim Sultan and Caliphs. To call into question the legitimacy of Muslim leaders, the

Byzantine Empire used the Arabic succession process against potential adversaries.

Primogeniture was not widely practiced in the Muslim world. Without the stability of knowing the oldest son would inherit the throne, it was possible for the Byzantine Empire to support any of a number of claimants to power.

Since the Empire generally had some number of soldiers from most surrounding states as mercenaries in the Imperial army, they could often back up their claimant with an army of soldiers that would not seem so much like invaders as liberators. The Byzantines tried to keep a stable of possible claimants to the thrones of their neighbors on hand should the need arise to distract an opponent from offensive action against the Empire (Diehl, 1957, p.60). As late as the 1400s, long after Byzantium had declined in power, the emperors were still involved in this diplomatic game to weaken opponents. After the Ottoman Sultan Bayazid was killed by Tamerlane in 1401, the empire backed one of the claimants against the others and allowed a second to convert to Christianity and stay in Constantinople as a spare should their first choice lose (Sphrantzes, 1980, p.22).

Money was the most commonly used tool of Byzantine diplomacy. As Diehl (p. 55) states "Money was always regarded by Byzantine diplomats as being an irresistible argument, and was used indiscriminately and sometimes unwisely, in and out of season." While the Byzantines did use money liberally and were often brought to task by their own historians for wasting money on gifts and subsidies, money was often successful at buying out opponents, at least temporarily.

By manipulating the subsidies of neighboring states or by suddenly giving the subsidy to a powerful nobleman who was not the king, localized conflicts that the Empire

did not need to be involved in militarily could be created. This conspicuous use of money also bolstered the argument of Byzantine economic superiority. The soldiers supplied, in return for these subsidies, not only strengthened the imperial army, they were a potential source of soldiers to support a civil war in their home kingdom if called upon. These and other techniques were harnessed to the ultimate goal of preventing alliances and ensuring that if the Empire was on the offensive on one front, it would not have to worry about major attacks on another (Diehl, 1957, p.56).

The variable of the value of relative superiority in influencing adversaries has already been alluded to. The Byzantine Empire's position at the crossroads of Europe and Asia gave it a realized opportunity for economic might that it used to its advantage. Trade in manufactured goods and raw materials, as well as Byzantium's own production of finished and luxury goods provided great wealth. Much of this wealth was used in the strategic distraction campaign discussed above. More of it was used to impress invited rulers and ambassadors of the majesty, divine favor and economic relative superiority that the Empire enjoyed. Some of this wealth provided for the navy, fortifications and central army of the Empire.

The navy of the Byzantine Empire was vital to its survival, although this was not apparent to all Byzantine rulers. Byzantine naval strength waxed and waned with the attention of the Emperors. When the Emperor ensured the strength of his navy, it could support land armies and allow strategic mobility. The navy also ensured the safety of trade by sea. This was vital not only to the wealth of the Empire but also, since it allowed Constantinople to be supplied by sea during sieges, was instrumental to the very survival of the Empire on several occasions.

The technology that ensured Byzantine supremacy in defensive sea battles was Greek Fire. This Byzantine equivalent of napalm was sprayed from a projector. It was devastating against ancient and medieval wooden ships, which had to close to within touching distance to be decisive. When the Byzantine Navy was in good repair and well manned, it could defeat almost any invading naval force.

As it fell into neglect the Byzantines started relying on foreign merchant shipping and began renting naval force from the Italian City states such as Venice. The results were disastrous. The trading economy of the Empire began to erode when foreign interests began negotiating permanent trade privileges in exchange for temporary naval aid. The Venetians were able to get permanent tax free trade and a section of Constantinople in which to live in exchange for badly needed naval forces used in the fight with the Normans over the Adriatic port city of Dyrrachium in the 1080s (Ostrogorsky, 1969, pp. 358-359).

While their aid did prevent the Normans from invading the Balkans, the loss of revenue and huge advantage in trade given to the Venetians meant that Venice came to control much of the Byzantine economy. Venetian maneuvering to keep this advantage eventually led to the only successful attack on Constantinople by an outside force between 330 and 1453 AD. Even after this disaster, the fourth Crusade, when the crusader army conquered Constantinople in 1204 at the urging of the Venetians, Greek Fire allowed the Byzantines to defend their ability to supply Constantinople by sea. This allowed the greatly diminished Byzantine Empire to hold out for another 200 years before the Ottomans used cannons to finally take the city by assault.

The central army was largely made up of the mercenary contingents either supplied by neighboring rulers in return for subsidies, or hired directly. It also contained some purely Byzantine troops drawn from the provinces or themes. The central army was paid from the Imperial treasury. The thematic armies relied on the agricultural economy of the provinces. They were generally paid from the proceeds of a non-hereditary grant of land given by the Emperor in return for service.

If the thematic armies were successful at repelling or deterring attacks that disrupted agriculture, then the system worked fairly well. If the thematic army was unsuccessful or other taxes on the farmers were too great, then the ability of a thematic army to sustain itself on local resources was greatly reduced. Over time, the taxes on small farmers in the empire grew so great that most of them were forced to sell their land to larger landowners more successful at resisting central taxation.

This led to the decline of the thematic armies that were more heavily populated with Imperial citizen soldiers and a greater reliance on mercenaries and full time professionals paid by the central government. The Byzantine portions of the army contained the central elements of Byzantine relative superiority at land warfare. This superiority grew from three factors.

Firstly, the Byzantine army was the only standing army in Europe and western Asia. It actually practiced drills and instilled discipline in its soldiers. Even thematic armies, which were largely part time, were supposed to muster yearly and drill (Haldon, 1999, p. 211). This gave both physical and psychological benefits to the Byzantines. The Byzantines placed greater reliance on their infantry during the fifth and early sixth centuries. Even when the conditions changed in the seventh and eighth centuries to place

greater emphasis on cavalry, the Byzantine infantry continued to have important uses. The infantry core allowed the army to fortify its campsites in the ancient Roman manner to prevent surprise attacks on camps from being devastating. The Byzantines expressed their discipline and confidence by remaining silent during maneuvers and while awaiting combat in the face of the enemy. This was very unnerving to their opponents who went into combat yelling or chanting to give themselves confidence.

Secondly, local troops and resources could produce and man the fortified cities that made light raiding-forces unable to permanently conquer Byzantine territory. The fortification of cities, including the capitol, Constantinople, made Byzantine territory exceeding hard for any army to conquer as long as the central army and/or thematic army could prevent the Empire's enemies from being able to engage in long sieges. Generally the threat of even the thematic army prevented the besieging army from splitting up to forage and most enemy armies the Byzantines faced were unable to provide good enough logistics to mount a siege without foraging to sustain themselves. The logistic system of the empire could sustain armies without foraging, at least on Byzantine territory, and used this to their advantage in both siege warfare and other campaigns by waiting until an enemy was forced to split up to forage, then defeat him in detail.

Lastly, the central army could sometimes afford to equip extremely heavy cavalry, the Cataphracts, who were essentially the tanks of their day. With both the horse and the rider armored against arrows, the Byzantine Cataphracts could stand up to the swarming short bow based attacks of Arab or Turkoman light cavalry and still produce a disciplined charge with a solid front. This charge was often decisive, especially when

combined with the Byzantines own use of the swarm of light cavalry provided by mercenaries to fix an enemy in place so they could be charged.

The first two of these factors gave the Byzantines a tactical and strategic advantage on the defensive. The third factor gave them a tactical advantage on the offensive. The weakening of these portions of the army led to the disaster at the Battle of Manzikert and the subsequent loss of much of Anatolia.

Eventually, the thematic armies fell into decline due to over-taxation of the independent farmers. The independent farmers sold their land to large landholders and entered into semi-feudal relationships with the large land holding families. These families, called magnates, came to hold the bulk of military force in the provinces. The central government recognized the detrimental effects of the lack of taxable farmers and smallholder soldiers. This led to an ongoing power struggle between the administrative central bureaucracy and the magnates.

Militarily, the central government began a period of semi-intentional neglect of the army and navy because thematic generals from the large landholding families dominated them. Without central government support, the Cataphracts were too expensive. They reverted to more standard heavy cavalry, which was susceptible to arrows from light cavalry. The thematic armies ceased to muster and drill regularly. When the thematic armies were called to arms for a campaign, the great landowners sent as few and as low a quality of troops as possible to the thematic army, keeping the better quality troops for themselves. Revolts among the thematic troops led by magnate generals and treachery between the central administrative and magnate factions became more common.

This eventually led to a series of treacheries at the battle of Manzikert that ended with the capture of the Emperor by the Turks. The opposition party took advantage of the capture of the Emperor Romanus IV to install a puppet Emperor. When Romanus IV returned to Constantinople to gather the ransom he promised the Seljuq Turk Sultan, he was blinded with red-hot irons and soon died. This gave the Turks an excuse to invade. The thematic armies were too weakened by the loss of smallholder soldiers to put up an adequate defense on their own. The central army was in disarray from neglect and the defeat at Manzikert and did not come to the aid of the thematic armies or besieged cities.

Without hope of relief from an outside army, the walled cities of Anatolia either surrendered or were conquered and the breadbasket of the Empire fell to the Turks. This loss of the basis for the eastern thematic armies, when combined with the economic blow of the Venetian Concession of 1082, put the Byzantine Empire into a decline from which it would never recover. Even so, it would take almost 350 more years for the final defeat and conquest of the Empire.

The last variable explored is the value perseverance has in influencing adversaries. The Byzantines believed absolutely that, as the continuation of the Roman Empire and the defender of the true Christian faith, they would essentially rule forever. Any setbacks were only temporary as long as god was on their side. This belief in their position in the world gave the Byzantines an unparalleled ability to persevere.

In 628, the Byzantines finally defeated the Persian Empire (Ostrogorsky, 1969, p.103). The Roman and then Byzantine Empires had been trying with varying degrees of success to achieve this goal since the days of the Republic. The Bulgarian Empire managed to rise up twice, threatening Constantinople, and each time the Empire

destroyed them. The first Bulgarian Empire took two hundred years for the Byzantines to destroy (Ostrogorsky, 1969, p. 125 & 296). When a revolt in the Balkans turned into the second Bulgarian Empire, the Emperor Basil II spent thirty years defeating it (Ostrogorsky, 1969, p. 301-310).

The Byzantines were willing to fight for generations even in causes they eventually lost. They fought with the Muslims to hold Sicily for over fifty years (Norwich, 1997 p.134). After the Arabs invaded Crete in 818 AD, the Byzantine Empire tried repeatedly to retake the island and only succeeded in 961 (p. 134 & 185).

The Byzantines honestly believed they were destined to control all the territory that had ever been Roman. Their diplomacy and rhetoric reflected as much, and they spared no effort in reminding ambassadors and visiting royalty of their religious and historic manifest destiny. Any defeats were only temporary and all conquests were eternal. This obsession with the former territorial glory of Rome was also a Byzantine version of Achilles' heel.

Whenever the Empire was strong enough, notably under Justinian and the Macedonian Emperors, armies would be sent forth to reconquer as much of the old Roman Empire as possible. This usually meant over extending the territorial grasp of the Empire and leaving it open to eventual recollapse (Diehl, 1957, pp. 176-180). It also negatively impacted Byzantine foreign relations since no king of territory that had ever been Roman could be viewed as legitimate unless he acknowledged the Emperor as his Sovereign. It was this attitude that underlay much of the disputes between Byzantium and the Crusaders and was at least partially responsible for the ongoing theological fight with Rome.

While their belief in Byzantine superiority some times blinded them to opportunities for equal coalition, it was also their greatest strength and gave them the will to persevere. Even after the disasters of Manzikert in 1071 and the sack of Constantinople by the Crusaders in 1204, the Byzantines managed to retake the city in 1264 and continue to struggle for their manifest destiny until the Ottomans conquered the city in 1453. No adversary of the Byzantines ever had reason to doubt that the empire would react to military confrontation as vigorously as it was able.

In summary, the Byzantines used all of the variables under consideration by this thesis at one time or another. When they used them well, they grew stronger. If they used them poorly, they declined. In the period between 680 and 1204 the Byzantines went from decline through strength to overextension and back into decline. The Byzantines failed, however, to blend their use of the variables into a coherent, long term strategic plan. This lack of long-term thinking contributed greatly to their eventual decline.

	Perseverance	Forward Presence	Coalition	Relative Superiority	Strategic Distraction
Byzantium	+++	++	++	+++	++

Table 2 Byzantine Assessment

Perseverance- (+++) Byzantine perseverance was the single strongest component of the ability of the Byzantine Empire to survive for as long as it did. They never failed to display their belief that they were destined to control all territory that had ever been Roman. Even during the catastrophic decline after the Battle of Manzikert, they never collapsed and continued to struggle as vigorously as possible right up until the conquest of Constantinople in 1453. Displays of Byzantine manifest destiny were part of every

campaign they fought. Perseverance was also the Byzantines' 'Achilles Heel'.

Whenever the empire gained enough strength, an Emperor would decide that it was time to start the offensive that would retake all of the old Roman Empire. The resulting overextension of the empire would inevitably lead to a major defeat and usually the loss of more territory than had been gained by the offensive.

Forward Presence- (++) The Byzantines built a successful virtual forward presence system along the edge of the Anatolian Plateau in the Eighth and Ninth Centuries. They were not successful at building such a system on other frontiers of the empire. They also unintentionally dismantled the system in the tenth and Eleventh centuries and were only partially able to reconstruct it after the Turkish invasions following Manzikert. The Byzantines never fully understood the advantages this system gave them.

Coalition- (+) The Byzantines were quite successful at building tactical and even operational level coalitions based on mercenaries and vassal troop contingents. Their failure to allow themselves to enter into strategic coalitions based on equal partnership cost them several missed opportunities; and the arrogance they displayed to coalition leaders directly contributed to the sack of Constantinople by the Fourth Crusade, which greatly hastened the decline of the empire.

Relative Superiority- (+++) Byzantine relative superiority was the basis for their success. Even when all other aspects of their policy failed and a superior force besieged the capitol, they were generally able to break the naval blockade, required to starve out the city, using Greek Fire. Their economic superiority underlay both their diplomatic and their military success. Loss of much of the agricultural basis for the success of the

thematic (provincial) armies in Asia after Manzikert combined with the loss of taxes from trade caused by uneven treaties with Venice and other Italian city-states to erode the economic health of the empire. This loss of economic superiority was at the root of Byzantium's decline after the Fourth Crusade.

Strategic Distraction- (++) The Byzantines both took advantage of natural strategic distractions amongst their enemies and attempted to cause them. They used strategic distraction at every level of their operations whenever possible. However, they often failed to consider the long-term consequences of their strategic distraction operations. This failure often meant that tactically successful distraction operations often had negative long-term consequences. This occurred most often when the Byzantines tried to play nomadic tribes off against each other. Since the winner usually absorbed the loser, this tended to create larger, more dangerous nomadic tribal units.

The Byzantines show that use of these variables, even without a long-term plan, can help maintain an empire. They successfully used all of the variables considered in this thesis. When they misapplied or over applied the concepts it often led to long-term problems for the Byzantines even when they were successful in solving the immediate problem. If they could have developed a viable long-term defensive plan using these variables to achieve a stable defensive position instead of a cycle of expansion and contraction, it is possible they could have defended their empire for another thousand years.

IV. THE BRITISH

Britain during the 19th Century was a slightly different type of world power than the Romans or Byzantines. British power rested upon the shoulders of its naval power and the resulting military and economic superiority its naval power provided. England did not pursue world occupation. It did not invade Europe and attempt to occupy it through force. While it did expand its sphere of influence through colonies and allies throughout the developing world, it accepted its limitations in applying force where feasible and deemed required. Britain often preferred to broker influence and minimize military actions, particularly the deployment of ground forces, especially against other world powers (Chamberlain, 1989, pp.7-10).

The campaign in Sudan was an exception to this general policy and is illustrative of how the British deviated from engagement and negotiation and as a result had to rely upon military operations, as the opportunities for deterrence and coercion were either largely missed or ineffective. Sudan is a worthwhile study as it provides a contrast to the more successful application of our variables in the case studies of the Romans and Byzantines. It is also a scenario that is applicable to the United States today. The adversary was in a region of questionable strategic value, possessed a large but technologically inferior military, was motivated by a charismatic leader and mobilized through religious zealotry. This description can be applied to numerous potential adversaries of the United States now and into the foreseeable future. The Americans will face their own Sudan and therefore reviewing this case study is of importance.

As Muriel Chamberlain stated, "The Age of Discovery had shifted the balance of power in Europe from the centre to the Atlantic littoral. Trade, with its economic power,

came to be dominated by shipping and shipping routes rather than, as formerly, land routes. Britain, which already had a fishing and maritime trading tradition, was ideally suited to take advantage of this shift” (Chamberlain, 1989, p.8). This is a position not unlike that of the present day United States as the world becomes more globalized and the power of information is ascendant.

The British campaign in Sudan during the 1880s and 1890s is illustrative of deterrence and coercive failure and success. A pattern of positive and negative use of the variables recurs within the campaign. While the Roman and Byzantine case studies cover operational and strategic applications of the variables, it is worthwhile to study this specific campaign because it contains applications of all of the variables in a tactical setting that complements the other studies. The applications of the variables in the campaign are both positive and negative and often unintentional. It shows gives us a broad array of how the application or failure to apply the variables can impact a campaign.

In 1884, a holy man, Mohammed Ahmed, also known as the Mahdi, led a movement of Islamic revolution in Sudan. The British, who wished to minimize their commitment in the region, largely ignored the rise of the Mahdi. It was as Churchill put it, “the desire to get out of the country at once is the keynote of the British policy” (Churchill, 1902 p. 37). The subsequent Egyptian failure to counter the Dervish uprising was met with only a token effort by Britain to counter the Mahdi’s aggressions against their sphere of influence.

General “Chinese” Gordon, a soldier who had success in dealing with the Chinese and is of some renown for his abilities, was sent to lead the Egyptian forces against the

Sudanese dervishes. The British had ignored the training of the Egyptian forces and while the Gladstone administration made a symbolic gesture of sending a leader of some renown and experience against third world forces, General Gordon was left to his own devices, and ultimately his own demise.

Since he was leading an army that was largely untrained and pressed into service against a motivated religious movement, Gordon, despite his extraordinary personal efforts, was doomed. His repeated requests for resupply and reinforcements were ignored (Churchill, 1902, pp.45-48). The apparent hollow gesture by the British in sending a figurehead without support was a poor opening gambit in the campaign. The mixed message of sending anyone at all to support the Egyptians, but failing to send a force significant enough to be decisive in the campaign may be emblematic of the issue any power faces. How can an actor remain engaged throughout its sphere of influence while disengaging itself from fights it wants no part of without compromising its validity as a great power?

The Mahdi recognized that Britain did not consider him a valid concern and would not support Gordon and the Egyptians properly. This negative application of perseverance and forward presence by the British bolstered the Dervishes by validating their belief of their religious destiny of controlling northeastern Africa. The Mahdi has no reason not to attack; he “knew” he would defeat the Egyptians and General Gordon in the process. Even the eventual outcry in England to support Gordon in Khartoum that results in the “Gordon Relief Expedition” was viewed contemptuously, as it only consisted of two thousand soldiers (Churchill, 1902, p.52).

The Mahdi attacked and, despite a moving defense by the Egyptian forces, eventually defeated General Gordon and the Egyptians at Khartoum prior to the arrival of the relief force. The Sudan was lost and the news of the defeat rocked England. One of the last telegrams sent by Gordon to Sir Evelyn Baring before the wires were cut was prophetic. He stated that since the British government would not help his cause, Gordon felt free to act as he saw necessary. "Eventually you will be forced to smash up the Mahdi" and that if England did not change its course, it would be branded with "indelible disgrace" (Strachey, 1918, p.18). When the telegram became public there was a general outcry, and Gladstone, after reading the telegram in a newspaper, was devastated.

A religious zealot and his army of sword-bearing nomads defeated an "army" of the continent, even if there were few British there. The world viewed the Sudan and Egypt as British, and therefore the perception was that the loss of Sudan by the Egyptians was a double loss for Britain. The British lost a country and its army was defeated. The feeble effort in deterrence failed, as the lack of perseverance and minimal forward presence of the British was damning. Having failed to deter, the British eventually had to resort to coercion in Egypt and the Sudan as a result.

The resulting fallout of the Khartoum debacle initially led Britain to concede the Sudan and move onto other matters in the world. However, in the late 1880s and early 1890s, England was stimulated to reassert itself in Egypt as the Mahdi and his forces had failed to expand their holdings, apparently content to hold the Sudan. The British, seeing an opportunity to reassert itself in the region, funded the Egyptians and sent technical experts to boost their government, economy and most importantly, the new Egyptian military. A mere 26 officers and a "score" of talented drill sergeants reconstructed and

retrained a new Egyptian Army, since the old army had been dissolved and disbanded after the loss to the Mahdi. Within three months of the training cadre's arrival, 6,000 Egyptian soldiers were undergoing their first public review. Both faith and competence had been restored in the Egyptian military (Churchill, 1902, pp.89-98). The British successfully utilized a limited number of human assets and leveraged its superior economic and military techniques to revive Egypt to the point of being able to reestablish their old sphere of influence.

This is a positive application of the variable of relative superiority. Britain was able to reconstitute and train a new army, though it was initially small and insufficient to wage war with, in three months time with less than fifty training cadres. The system employed by the British was a tribute to their relative economic and military superiority. The systems employed had been refined and tested throughout the world in other British colonies and allies, specifically India, and proved effective.

There was also an application of the variable of perseverance. Britain did not abandon Egypt, at least not permanently, but in time rallied around the exposed failure and eventually set about to correcting it. Another application was that of coalition. Britain had a force in northeast Africa at the cost of only fifty or so British troops in addition to various diplomats and civil servants. The use of coalition allowed the British to expand their influence and power without great expenditures of their limited resources.

When the British and Egypt began their reclamation project of Sudan, the Egyptians were willing partners and filled the ranks. The campaign would have otherwise failed, and probably never initiated, if not for the willingness, competency

(resulting largely from British training) and resiliency of the Egyptian forces (Churchill, 1902, p.109). This is a positive application of coalition.

The decision to reassert itself in recovering the Sudan was a start, but reconquest would not be easy. In order to move and supply the troops going into southern Egypt and northern Sudan, hard choices were made. The terrain did not facilitate large overland movement, as the ground did not allow fast movement, nor were there water sources away from the rugged parts of the terrain to support troops. So either the British moved south along precarious and exposed supply lines tied to the Nile and its tributaries, or it changed the terrain to conform to its needs. European experts and the Mahdi alike considered the idea of a desert railway impossible. Given the unacceptability of the first option, General Kitchener, the leader of the British forces, chose the impossible. The successful construction of a railroad to support the reclamation of Sudan was in part a miraculous engineering feat, but also a stroke of military genius. The failure to construct the railroad may have resulted in disaster for the British campaign (Churchill, 1902, pp.166-178).

Few nations, if any, could have constructed a railroad in Sudan and southern Egypt at that time. It facilitated the rapid deployment and reinforcement of troops and supplies as well as gaining the element of surprise in the initial battles with the Khalifa, the successor of the Mahdi, and his army of Dervishes. There was the residual benefit of discovering two additional water-wells in areas the local Arabs considered a wasteland and bereft of water.

This is a positive application of relative superiority and to a lesser extent perseverance. No local could have ever made a railroad in the desert and only the

technology possessed by the British would have allowed for the finding and drilling of the wells. The railroad combined with the steam ships rolling on the Nile so that it was “possible with convenience and speed to send into the heart of the Soudan great armies independent of the season of the year and of the resources of the country...Though the battle was not yet fought, the victory was won”. As Churchill points out, when the troops first piled into the confluence of the Nile and Atbara rivers, “the doom of the Dervishes was sealed” (Churchill, 1902, p.182).

The completion of the railway allowed the subsequent occupation of Berber by a small but mobile force that had a pacifying influence on the region. The Khalifa saw the local tribes as possibly suspect after the desertion of the riverain tribes to their north and was also caught by surprise in the completion and impact of the railway. Therefore the Berber area tribes were left to their own defense and as a result capitulated. Given a forward presence in the region by a token force, away from the main force along the Nile, the locals immediately accepted the Egyptian rule and were compliant the rest of the campaign. This was important because they were on a vulnerable flank of the main expeditionary force (Churchill, 1902, pp.202-3).

This was a successful application of forward presence. It also had a strategic distraction application. The Khalifa did not pursue the attack against the railroad because he did not trust his northern tribes and fighting broke out between his forces. He was unable to bring himself to put his forces with tribes he did not trust to be loyal. The opportunity to hold Berber and delay the completion of the railway, and the resulting deployment of the expeditionary force, for an estimated year or more was lost, in part, due to the internal friction of the Khalifa’s tribes (Churchill, 1902, pp.202-3).

After the fall of Berber to the British, the agreement between Britain and Italy for the turning over of the fort at Kassala on the Mareb River, along the flank of the expeditionary force, to Egyptian forces again provides a positive application of both forward presence and coalition. The small force occupied the fort with minimal negative impact on the expeditionary force while protecting its flank, but had a significant negative impact on local opposing forces. The loss of control over the region along the modern day Eritrean border deterred the Khalifa from attempting to flank the expeditionary forces and provided the British forces with access to several key areas that were largely equidistant from Kassala (Churchill, 1902, pp.208-11).

When the Khalifa finally did move to recapture Berber from the small force there, he was unable to comprehend the capability the railroad brought to the expeditionary force. While his embarrassing loss at Berber was a great victory for the British, the attack to regain Berber by Khalifa was not deterred. This was a failure in the application of both the variables of forward presence and relative superiority as deterrent measures, though there were subsequent positive coercive measures. The Khalifa did not comprehend the virtual forward presence the railroad presented, nor did he understand its capabilities, and therefore the relative superiority it represented. He did not understand that the railroad could bring thousands of troops to the battlefield in a matter of days. He could only appreciate the actual forces present in Berber. The force projection capability was lost on him (Churchill, 1902, p.211).

He also did not believe the British and Egyptian railroad crews were capable of laying the track as quickly as they did and therefore believed the railroad was much further north than it was in reality (Churchill, 1902, p. 211). The attack may not have

occurred if he had appreciated these aspects, though the nature of his cause may have been hard to deter. The British had failed to deter the Khalifa through properly ensuring the Khalifa understood the potent forces arrayed before him. The issue may be that the British recognized an availability bias with the Dervishes, who had no comprehension of the capabilities facing them. Rather than use their relative superiority to send a message to the Khalifa, the British seemed satisfied to utilize their advantages as a military tool as opposed to a diplomatic tool. No effort to get the Dervishes to modify their behavior through a demonstration of how the advantages could be used against them was done by the British. It was purely a military application of relative superiority, neither deterrent nor diplomatically coercive in purpose.

Deterrence may not have been the British desire, but it was almost impossible given the apparent intent of the British and the availability bias of the Dervishes. Even the unintentional benefit of meaningful coercion resulting from the initial battles and the applications of the British relative superiority did not occur until after the campaign. The Khalifa had no reason to believe he would lose and therefore attacked. The same factors the Khalifa was ignorant of and therefore initially hard to deter or coerce were the same reasons the British were victorious. Ultimately these factors had a coercive effect on the Dervishes in the immediate future after the battle of Omdurman. The British ability to resupply and move military assets as well as the firepower their weapons possessed were not understood by the Khalifa, but were ultimately his downfall.

As the campaign continued, the expeditionary force generally assumed the offensive with the Dervishes in the defensive. The expeditionary force continued to win, but often at great cost going against fortified positions. The Dervishes were pushed back

to Omdurman where the Khalifa decided to retake the initiative and fight on the plains of Kerreri on the offensive. He had deserted his defensive campaign as a result of the ability of the British artillery and steamer boats to reduce or bypass his defensive positions. The British technology rendered a defensive campaign a losing proposition. He was influenced into assuming an offensive strategy that had been successful with his predecessor, the Mahdi, prior to the British taking the situation seriously (Churchill, 1902, p. 259).

He massed 60,000 soldiers at Omdurman to destroy the expeditionary force outside of Kerreri. This change back to an offensive philosophy did not accomplish his objectives, as superior weapons other than the gunboats, such as the maxim gun and advanced carbines, were instrumental when the British defeated the Dervishes. It appeared that the Dervishes still did not understand the capability of the British cannons as they repeatedly failed to avoid the kill boxes of the artillery. An otherwise solid plan by the Khalifa failed to account for modern weapons (Churchill, 1902, pp.274-5). He was still fighting a technological peer in his planning.

However, this was still a “tough test.” The Dervishes outnumbered the British-led forces, were motivated and were not afraid to die, as is the case with many religious warriors, had a charismatic leader and were fighting on known terrain. The battle of Omduran, even with the superior weapons and training of the British, was a close run thing and, like so many other battles during the campaign, may have turned to Dervish victory without timely and heroic actions on the part of the British-led forces. Without the full complement of advantages the British brought to the battlefield, the campaign

may have turned out differently. In the calculus of what is “enough” to get the job done in an acceptable manner, the British were walking a very fine line in the Sudan campaign.

Any perceived advantages either the offensive or defensive roles may offer were rendered moot by the superior weapons of the British. The Dervishes realized too late that both roles were equally ineffective in their case. Omdurman was the last great military action by the Dervishes.

This was an initial negative and then subsequent positive application of relative superiority. Assuming rationality, if the Khalifa understood what he was facing, he should have never fought the British in a direct manner. Again, while the relative superiority of the British was ultimately advantageous for their military reconquest of the Sudan, they failed to deter or substantially coerce the Dervishes who continued to fight up to Omdurman.

After the defeat at Omdurman, the Dervishes split and were dispersed throughout the Sudan and were largely impotent on an operational scale the rest of the campaign. While many remained loyal to the Khalifa, he was not able to reform his army as many returned to their homes in defeat, not wanting to face the British again (Churchill, 1902, pp.301-9). The Sudan was reclaimed for all intents and purposes.

The British were successful, but may have been able to lower the cost in manpower, resources and time if they had effectively convinced the Khalifa and the Dervishes that they were doomed to failure. The British could have sought to broker a settlement through primarily maintaining a better sense of perseverance, forward presence and relative superiority. These were the significant leverage points the British had available when looking at our variables.

The initial failure of all three variables in deterring the Mahdi from starting his religious crusade set the ground work of a constant coercive campaign once the Khalifa took power, and as Hinkle and Biddle note, "coercion is hard" (1997). Having experienced success, the Dervishes believed in the righteousness and infallibility of their religious cause, thus discouraging deterrence and requiring coercion.

The British were able to apply certain coercive measures successfully, but opportunities to apply additional measures or apply them in a more effective manner were not recognized, ignored or mismanaged, especially during the deterrence phase. The failure to establish the conditions for deterrence in the beginning of the campaign resulted in a long, costly coercive action. All five variables were present during the campaign, but were purposely applied only at the tactical level in general and were not purposely applied as deterrence and coercion measures at the operational level during the actual campaign. However, the coercive application of the variables at the strategic level in the form of reinvesting in Egypt and pursuing the reclamation of Sudan was successful. Britain did reap benefit in the long term from their actions in Africa.

Greater purpose and success were demonstrated after the fall of the Dervishes at Omdurman. The reconsolidation effort of Sudan was more successful in establishing a measure of perseverance and forward presence in particular. Having failed to deter adversaries from challenging the British role in the Sudan, they went about to insure that the world knew that the Sudan was once again their sphere of influence.

Three significant things emerged from the British efforts in the Sudan. Besides the physical reclamation of northeast Africa, the Fashoda Incident and the Sudan Agreement were the others. These reestablished the British predominance in the region.

The failure of Britain to deter the Mahdi and the resulting campaign in the Sudan apparently lead the French to believe that the British rule over some of the more remote African holdings was weak or unsupported (Bahl, 2000, p.1; Churchill, 1902, pp. 316-9). The British were also busy fighting in the Sudan and was not in a position to recover lands in Uganda. So the combination of a perceived lack of perseverance and a strategic distraction in Britain convinced the French to send an expedition to claim Fashoda in Uganda from British influence.

However, the British did reassert its control over the more remote areas and rolled up to French-occupied Fashoda with a superior force. The British and French were in the equivalent of a cold war and both sides understood that a major war could result if Fashoda were to become a battleground. So both sides waited for orders. The combination of the effectiveness of the British campaign during the intervening months while the French were moving to Fashoda, as well as the local balance of power and events in Europe, convinced the French to withdraw from the fort and concede the region back to England (Bahl, 2000, pp.1-2; Churchill, 1902, pp. 316-25).

The two powers then met and signed the Niger Convention that split Africa between their spheres of influence. Britain now controlled, as far as the European Powers were concerned, the Nile Basin. As Churchill put it, "Germany was, however, soothed by the promise of the observance of the 'Open Door' policy upon the Upper Nile. Italy...followed Germany. Russia had no interest in the quarter... The rest were not consulted: and the Declaration may thus be said to have been recognized by the world in general" (Churchill, 1902, p.324). Britain had over the course of the Sudan campaign gone from being perceived as so weak in the region that the Sudanese and a small

expeditionary force from France challenged their power in the region to the unchallenged leader of the Nile Basin through proclamation and deed.

The third significant event was the release of the Sudan Agreement, which made Egypt co-rulers of the Sudan with Britain. This made the local power possess a vested interest in maintaining control over the region. This form of coalition strengthened the forward presence in the region as Egyptian troops now represented British rule in the far reaches of the basin. Through the Egyptians, the British were able to maintain their influence over the region without large commitments of limited assets.

As Chamberlain noted the shift of power to seafaring nations during the Age of Discovery and the associated ascendancy of Britain, the emerging "Age of Information and Globalization" gives the United States an opportunity to take advantage of the relative strength of the United States in economics, technology and information. England was able to utilize its relative superiority, primarily economic and military, resulting from its naval prowess to augment its other deterrent and coercion methods. So too can the United States harness its relative superiority to improve its deterrent and coercion strategies.

All our variables of the methods of deterrence and coercion influenced Britain's ability to manage its empire, but ultimately, its power rested on its relative naval superiority and the benefits derived from it. All other positive abilities largely resulted from this. This case study is illustrative of how a failure to apply our variables can impact on a power's ability to deter and coerce. There is a subtle but important difference between possessing the opportunity to utilize a variable and actually using it effectively. The British in Sudan had opportunities but often failed to use them

effectively. So while the Roman and Byzantine case studies show a general positive application of our variables, this case study illustrates how a power can miss opportunities to use them and the cost of conducting operations as a result. The United States is in the same position that England found itself in as the Industrial Age began. America can draw lessons from how Britain leveraged its abilities to overcome its limitations to influence events worldwide. Recognizing when the United States has an opportunity to apply the variables and then implementing a thoroughly conceived campaign to take advantage of them can do this.

In summary, the British application of our variables in Sudan was mixed and often unintentional. The case study provides a sampling of both positive and negative applications. Additionally it demonstrates the opportunity costs of not having a coherent campaign plan implemented to control the region. This tactical scenario demonstrates the cost of failure to deter and coerce can be substantial even against an inferior adversary who possesses the will and numbers to take on an empire in a regional hegemonic conflict.

	Perseverance	Forward Presence	Coalition	Relative Superiority	Strategic Distraction
British	+	-	++	-	--

Table 3 British Assessment

Perseverance – (+) The single greatest failure and success in the application of any variable in this case study occurs in perseverance. The British made a negative statement of perseverance in the beginning of the incident. Their unwillingness to commit to the defense of Sudan and subsequent desertion of Egypt in the mid-1880s sent a reinforcing message to the Dervishes that their cause was just and divinely sanctioned.

However, their actions once they decided to take back the Sudan sent a strong message that the British were reestablishing their sphere of influence in the region. The willingness to commit the resources and effort, a prime example being the railroad, into reclaiming a lost colony of little strategic consequence other than to display resolve made a strong statement of perseverance. The cost of this action was made greater by the disastrous failure to make the same commitment almost a decade earlier. The message was sent to both the Dervishes surviving the campaign and to secondary audiences that facilitated the acceptance of the Niger Convention and Sudan Agreement.

Forward Presence – (-) Again, the failure to deploy forces in a meaningful manner invited the Dervishes to conduct their campaign. The forward presence of the forces that comprised the Gordon Relief Force may have been enough to dissuade the attack on Khartoum and establish a more acceptable regional balance without extending the campaign for another fifteen years. At no point during the campaign did the Dervishes feel that the local balance of forces was disadvantageous. The only positive application of forward presence by the British was the occupation of Berber and Kassala, which deterred Dervish offensives that could have turned the tide of the campaign at least temporarily. Forward presence is primarily a deterrent measure and the British failed to do so with some minor exceptions.

Coalition – (++) The only way the British were able to conduct this campaign at all, let alone successfully was through a coalition of Egyptian and Sudanese troops. The campaign was conducted with a vast majority of the troops being from coalition partners. At the height of the campaign, the British troops and personnel may have numbered in the hundreds or a few thousand, though there were scores of thousands of troops on each

side. This successful application of one of the variables was the single most important aspect in the British victory. It also sent a message to secondary audiences that the British had reliable and competent allies in the region to preserve their sphere of influence and the great powers acquiesced after the Fashoda Incident.

Relative Superiority – (-) The combination of the superior weapons, such as the maxim gun, cannon and gunboats, along with the technological marvel of the railroad were instrumental in the British victory. However, as a tool of deterrence and coercion, they were not particularly well applied. These systems were applied only in a military manner, not a diplomatic one. The opportunities for utilization of relative superiority as a tool for deterrence and coercion were not purposely applied, though they did have an unintentional positive effect. The Dervishes were unable to counter the weapons and therefore went into a defensive mode hoping to develop a way to resume the offensive. While on the defensive the British were able to gain the initiative and control the pace of the campaign until the outcome was largely decided.

At no time did the British use their relative superiority to send a message to the Dervish leadership in order to modify the Dervish behavior. The relative superior aspect of the campaign was almost purely incidental. The British did not seem interested in applying their comparative advantages in such a manner and the secondary audiences they targeted apparently were already cognizant of their capabilities. The British chose to take advantage of the availability bias possessed by the Dervishes as opposed to attempting to have the Dervishes capitulate in this respect. They perceived the bias to be more beneficial than the deterrent or coercive effect of the superior systems.

Perseverance may have been deemed a more appropriate goal to emphasize to the secondary audience, and therefore the relative superiority aspect was downplayed.

Strategic Distraction – (--) There was no purposeful application of this variable by the British. While there was an incidental event concerning the riverain tribes and the Mahdi's lack of faith in their reliability that had a substantial impact in the fall and failure to retake Berber, strategic distraction was largely absent from the Sudan campaign. The greatest application of strategic distraction was the internal British issues that led to the failure to properly support Gordon and the subsequent decision to withdraw from Egypt for the better part of a decade. However, one small positive application is the British use of French internal disarray to help settle the Fashoda Incident and subsequently the Niger Convention. This does not compensate for the enormous negative application of the earlier distraction, which set the stage for the Dervishes' initial successes.

The British did not have a coherent strategy for either deterrence or coercion in the Sudan campaign. They initially failed to make any positive application of the variables in the mid-1880s and subsequently lost Sudan and left Egypt to their own devices. The British reassertion into northeastern Africa in the 1890s is a positive application of perseverance. The absence of a purposeful operational application of the variables in the reconquest of Sudan did generate positive secondary effects. The Niger Convention and Sudan Agreement are both directly tied to the deterrent and coercive effect of the Sudan and Fashoda campaigns. The British did have some positive tactical applications of the variables, but there was no coherent diplomatic stance to attempt to modify adversarial behavior other than through military endeavors. The ultimate British success in reclaiming the region and reestablishing their sphere of influence may have

been accomplished at a lower cost if the a coherent operational plan had been conceived and enacted. This is a lesson American decision-makers need to heed.

The British seem to have a mixed record of deterring adversaries. They are successful in their efforts when dealing with situations involving either a relatively weak state adversary or minor protégé. However, when dealing with a non-state actor such as the Dervishes or a peer adversary with a peer protégé such as Germany and France prior to World War I, they failed (Huth, 1988, pp.24-25). This might indicate that the British were able to identify how to deter in situations where the gain for the adversaries were low and deterring was easy, but when presented with tough tests, they did not know how to get the job done. Certainly the Sudan campaign would support this assessment of not being to identify the proper cost benefit variables when confronted with a tough test.

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V. CONCLUSION

A. THE CASE STUDIES

The case studies of the Roman, Byzantine and British Empires show that the variables examined in this thesis can be used for successful deterrence and coercion at the tactical, operational, and strategic levels of analysis. They also show that failure to account for these variables can have serious negative repercussions for deterrence and coercion.

	Perseverance	Forward Presence	Coalition	Relative Superiority	Strategic Distraction
Rome	++	+++	-	++	-
Byzantium	+++	++	++	+++	++
British	+	-	++	-	--

Table 4 Overall Assessment Matrix

Table 4 assesses how each empire did at applying the variables during the case studies. The Romans showed successful deterrence and coercion along a single operational level border, but allowed themselves to be strategically distracted. Additionally, they show that even an excellent deterrence program can be derailed by a faulty political system. The Byzantines had to use all the variables at one time or another at a strategic level in order to survive. However, by failing to create equal partner coalitions and giving up long-term relative superiority for tactical expediency, they sowed the seeds of their eventual destruction. The British show that not all the variables need be used to achieve success, especially in single campaigns. The British Empire was so large that making uniformly strong commitments everywhere was not feasible given

their constrained resources. Therefore, hard choices needed to be made as to their national policies when dealing with the smaller elements of their global empire. They initially made choices in the Sudan and Egypt based on their cost benefit analysis. They determined that they were not important protégés and let them go. Eventually their calculus changed and they had to act accordingly, which they did. However, their decisions also indicate the cost of missing opportunities to apply variables when the occasions arise. All three empires used at least some of the variables in three-dimensional foreign policy. They were often limited in their ability to harness secondary effects because information about their actions did not travel fast enough or far enough to affect many of their adversaries. With the global proliferation of information and the position of the United States at the forefront of this movement, we are in an even better position to conduct three-dimensional diplomacy by harnessing the value of the secondary effects than were the Romans, Byzantines or British.

B. THE THREE –DIMENSIONAL MODEL

The premise of our three-dimensional model is that any action taken by the United States attempting to influence an actor will have secondary effects other actors. The power of the three-dimensional model is evident when decision-makers take the secondary effect into account prior to acting when developing their foreign policies. Historically, we have seen great powers of the past use our variables as tools in constructing effective three-dimensional diplomacy. Given the United States' stated goals of preventing regional hostile hegemonies and coalitions, our three-dimensional model can be an effective and efficient tool for achieving these goals.

Information is what allows three-dimensional diplomacy to work in today's environment. Since all actions contain information content and actions are observed, the resulting ripples of any action can be harnessed to maximize the beneficial effect for the United States. While any foreign policy action contains information and has a resulting secondary effect, whether desired or not, the secondary effects are often either not recognized, not accounted for, or ignored.

The decision-maker should identify primary effect goals, as well as goals for the secondary effects. The specific goals for any effect may be substantial or minimal, but the goals for both effects need to be identified so as not to have a resulting negative effect, or at least minimize the negative effect of an action. The resulting combination of the primary and secondary effects can be controlled so as to maximize the benefits to the United States.

While the Department of Defense is certainly not the only player in United States foreign policy, it has an important role to play especially in deterrence and coercion. DoD can utilize our three dimensional model and hypotheses independently or in conjunction with other agencies to achieve its objectives. In an "Information Age", the Joint Chiefs of Staff and the regional CinCs need to be aware of the secondary effects of actions taken in one region on decision makers in other regions and plan accordingly. The need for communicating ideas and intent and coordinating actions between regions is even more important now that information travels globally in near real time. Coordination will be even more important in the future as information flow and global connectivity increase.

C. HYPOTHESES

We have shown the historical relevance of our variables. They continue to be valid in the modern context and are usable by both DoD and other U.S. agencies. The variables of perseverance, forward presence, use of coalition, relative superiority and strategic distraction are all in current use or are derived from current literature on deterrence and coercion. What has changed since the time periods of our case studies is the pace at which using these tools produce secondary effects. While the Romans and Byzantines often had to make an extraordinary effort to produce a desired secondary effect outside of the immediate vicinity of their primary action, modern actions have almost immediate secondary effects worldwide. The British represent a transitional state. They were one of the first powers to have to deal with to a primitive global communications network. This accelerated the actualization of secondary effects resulting from their actions.

If decision-makers accept the premise that our three-dimensional model and hypotheses are valid, then they should adopt the strategy of harnessing secondary effects in deterrence and coercion planning. The DoD in particular, needs to be cognizant that an action taken in one region has secondary effects both locally and globally. Therefore DoD planners and decision-makers need to ensure that deterrent and coercive actions take into account secondary effects by shaping and harnessing its information content. The coordination of actions among the regional decision-makers is needed to properly identify the appropriate course of action that achieves both the primary effect goals as well as the secondary effect goals. Each CinC is at any given point either the primary effect decision-maker or the secondary effect decision-maker, and is therefore influenced

by any action taken regardless of whether they are consulted about the impact an action will have in their region. Given this, the implementation of our three-dimensional model and variables can be a useful tool in maximizing the benefit of deterrence and coercive actions.

D. TARGETING METHODOLOGY

This toolbox can take the form of a sensitivity matrix containing the susceptibility of the target audiences to American actions. One axis contains the target country's sensitivities to the hypotheses. The other axis consists of the target audiences that the United States wishes to influence. The sensitivity of a particular country is determined through target assessment. The target assessment has two significant steps.

The first step is the gathering of intelligence on the target audience. The intelligence needs to account for the intelligence, political, economic, religious and cultural aspects of the target audience. This allows the analysts to construct what Army Civil Affairs calls the "world view" of a specific nation. This largely consists of how the country, and particularly its leadership, views its role in the local, regional and global communities.

This "world view" will drive which level of the hierarchy of motivations the target is operating at. The hierarchy for an authoritarian or totalitarian regime consists of leadership survival at the base, regime survival, regional balance of power and global balance of power at the pinnacle of motivations (see Figure 4). The more base motivations of survival supersede the higher motivations of balance of power. If the authoritarian or totalitarian leadership is threatened at the survival level, balance of power issues become secondary until such time as the survival issues are resolved.

Once the analysts determine where the target is on the hierarchy of motivations, then the American decision-makers can identify at which level the leadership can be deterred or coerced. Trying to influence the target at a level of motivation that is higher than the level the leadership is operating on is fruitless. If the only motivation the regime is concerned about is survival, then trying to change their behavior by tapping into their perception of global balance of power will not work. Only attacking at motivation levels that are at or below where the target is working can hope to successfully modify their behavior. Once this is identified, then the decision-makers can move onto the next step.

The second step is a sensitivity analysis. This accounts for how sensitive the target may be to American influence in each of the hypotheses. Sensitivity to statements of perseverance, American forward presence, the use of coalitions, American relative superiority and susceptibility to strategic distraction are usually different in some degree within a target and even more so over a spectrum of targets. The sensitivity to each hypothesis for a given target must be assessed. Either a target is highly sensitive, mildly sensitive or non-sensitive to actions taken in a certain hypothesis (see Table 5).

	Perseverance	Forward Presence	Coalition	Relative Superiority	Strategic Distraction
Eastia					

 Highly Sensitive

 Mildly Sensitive

 Non-Sensitive

Table 5 Sample Sensitivity Analysis


This sensitivity analysis in turn can be expanded to create a matrix that includes a set of targets and their associated sensitivities. This allows the decision-maker to easily identify those hypotheses and targets that can be easily influenced, those that may need some work so that the United States is able to generate greater behavior modifications through American actions and finally those areas where the United States must develop a plan to increase the sensitivity of the target set or that particular tool in the box will not render any change in adversarial actions. See Table 6.

The areas of high sensitivity are those areas that any action taken by the United States will generate a response almost immediately. The hypothetical country of Eastia in Tables 5 & 6 can be influenced immediately by actions taken by the United States that relates to American relative superiority, such as a new weapon or sensor system. These areas are particularly useful to decision-makers in crisis management or need a quick response. The mildly sensitive or non-sensitive areas can be modified over time, so these can be part of a long-term project where these hypotheses become more sensitive and therefore more useful to decision-makers. However, these are usually not the most effective methods to influence adversaries in a crisis. An action taken or targeted against Eastia in perseverance will not generate the same amount of behavior modification than relative superiority. An action taken relating to forward presence may not generate any behavior modification and therefore the United States should probably identify methods to increase Eastia's sensitivity to it. The end result is that decision-makers can identify areas to work on to increase adversary sensitivity and those that the United States can immediately impact on target behavior.

The matrix then allows the decision-maker to develop a campaign of American action to modify adversarial behavior. The United States can view Table 6 and identify specific sensitivities of target countries, e.g., Eastia is mildly sensitive to perseverance and less so to forward presence. The United States can use this information to develop a series of operations to form a campaign that ties together the sensitivities of the target set through direct and secondary effects. In peacetime engagement, the United States should pursue a campaign to increase the sensitivity of less sensitive areas while maintaining those areas that are highly sensitive. During crisis management, the decision-makers can easily identify those areas to which a target is sensitive. These areas can garner significant behavior modification and the U.S. should pursue operations that “push those buttons” through either direct or secondary effects.

For example, using the information in Table 6, the United States could develop a peacetime engagement campaign that targets the non-sensitive area of relative superiority in Westfalia and Northland. Actions taken to increase the sensitivity of these two countries have an effect on either maintaining the mild-sensitivity of Sudlandia or increasing it to highly sensitive while ideally maintaining the high sensitivity of Eastia. This operation is then theoretically tied to another operation with a similar theme but different target that addresses the non-sensitive aspect of coalition in Eastia and Sudlandia and reinforces the higher sensitivities of Northland and Westfalia. The campaign ties together several operations against a target set that increases the viability of the hypotheses as a toolbox.

	Perseverance	Forward Presence	Coalition	Relative Superiority	Strategic Distraction
Eastia					
Westfailia					
NorthLand					
Sudlandia					

 Highly Sensitive

 Mildly Sensitive

 Non-Sensitive

Table 6 Sample Sensitivity Analysis Matrix

In crisis management, the decision-makers identify those targets whose behavior need modifying and act to influence their highly sensitive hypotheses. Assuming the desire to impact on the whole target set, if Westfalia or Sudlandia need to be deterred, then the decision-makers should target strategic distraction, as all of the target set is sensitive to it to some degree and the primary targets are highly sensitive. The return for action taken in the strategic distraction hypothesis for this set of targets garners large returns.

A scale of viability develops when the target and sensitivities are known. If Westfalia is the primary target, then push its red buttons, the use of coalition and strategic distraction if at all possible. Recognize that strategic distraction will generate more effect on the whole target set and therefore, all other things being equal, should be the hypothesis targeted. However, if no reasonable opportunity exists to address strategic distraction either through direct or secondary effects against Westfalia or if the decision-maker wishes to minimize the impact on the rest of the target set, then the decision-maker

moves down the descending sensitivity scale to coalition (highly sensitive for Westfalia but has less impact on the rest of the targets), forward presence (mildly sensitive), perseverance (non-sensitive but greater impact on rest of target set) and finally relative superiority (minimum impact on target set) until an opportunity to conduct an operation arises. This scale allows the decision-maker to control the impact of their actions on the target set. A coherent campaign, or series of campaigns, that accounts for the sensitivities as well as the primary and secondary effects is the desired result.

E. SUMMARY

This thesis concludes that cost-benefit analysis is a valid tool for planning deterrent and coercion strategies. However, the existing literature does not take the impact actions have on observing audiences into full account. Therefore, a three-dimensional model is needed to account for the secondary effects of American actions. We conclude that, through information content, a three-dimensional throughput model is viable. By managing the perceptions of the audiences, the decision-makers can help account for the secondary effects actions have on observing audiences to the point where decision-makers can influence observing parties through primary actions against other actors.

We also conclude through the literature and case studies, that our hypotheses are valid. A sensitivity assessment for each hypothesis can be conducted for a particular country, taking into account the hierarchy of motivations and "world view" of each target. Therefore, when a decision-maker combines the three-dimensional throughput model with the sensitivity matrix, a targeting methodology emerges. By combining this model with the sensitivity model of other target countries, a larger tool is developed. The

decision-maker is able to use the combination to assess the best manner to address an issue for a particular country while recognizing the impact any action may have on another set of targets.

This analysis allows the decision-maker to develop and execute operations to impact adversarial behavior in an effective manner. This can be expanded to a purposely-devised campaign of operations that increases the leverage the United States has in deterring or coercing regional adversaries. This in turn can be expanded once again to a series of campaigns that ultimately produce a coherent deterrence and coercion strategy for the United States.

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